6TH BALTIC CONGRESS OF ONCOLOGY
"MULTIDISCIPLINARY APPROACH IN CANCER CARE"

OCTOBER 3-4, 2014
VILNIUS (LITHUANIA)

BOOK OF ABSTRACTS




"WE ARE WORKING TODAY
FOR THE BETTER TOMORROW"
20 THE ANNIVERSARY FROM THE FIRST MEETING OF ONCOLOGISTS FROM THE BALTIC COUNTRIES

UDK 616–006(474)(06)
Mu42

MAJOR EDITOR
Prof. Narimantas Evaldas Samalavicius

PUBLICATION WAS PREPARED BY:
Dr. Ernestas Janulionis
Ramune Mineikyte
Rita Karpiciute

EDITRESS
Vita Viluniene

DESIGNED
Mindaugas Jonikas

PUBLISHED
UAB "Dizaino meistrai"

PRINTED
BALTPO print, UAB

ORGANIZERS

CONGRESS PRESIDENT
Narimantas Evaldas Samalavicius (Lithuania)

CONGRESS VICE PRESIDENTS
Viesturs Krumins (Latvia)
Indrek Oro (Estonia)

GENERAL CONGRESS ORGANISER
Ernestas Janulionis (Lithuania)

INVITED SPEAKERS
S. Joukainen (Finland)
H. Mellstedt (Sweden)
Z. Maravic (Serbia)
I. Kossler (Sweden)
G. Ostoros (Hungary)
K. Pietruk (Poland)
A. Markauskas (Denmark)
V. Kataja (Finland)
S. Thueroff (Germany)
St. Joniau (Belgium)
M. Jurga (Belgium)
J. Capdevila (Spain)
D. Kaidarova (Kazakhztan)
B. Bashankaev (Russia)
M. Mirzaei (Iran)
A. Alonso (Spain)
A. Anttila (Finland)
M. Bielska-Lasota (Poland)

LOCAL SCIENTIFIC COMMITTEE
Ricardas Rotomskis
Laima Bloznelyte-Plesniene
Simona Ruta Letautiene
Eduardas Aleknavicius
Zivile Gudleviciene
Elona Juozaityte
Rasa Janciauskiene
Valerijus Ostapenko

INTERNATIONAL SCIENTIFIC COMMITTEE
Dace Baltina
Gunta Purkalne
Janis Eglitis
Peeter Padrik
Sergej Nazarenko

CONFERENCE SECRETARIAT
Vita Viluniene
Rita Karpiciute

EXHIBITION
Ramune Mineikyte

PUBLICITY
Juventa Sartataviciene

ISBN 978–609–95557–1–3

BOOK OF ABSTRACTS





Dear international guests, dear friends from Baltic states, dear colleagues, ladies and gentlemen,

It is a greatest pleasure and privilege to invite you to attend the 6th Baltic Congress of Oncology named "Multidisciplinary approach in cancer care", which is organized by the National Cancer Institute of Lithuania together with Lithuanian Association of Oncologic Societies, which unites both researchers and clinicians.

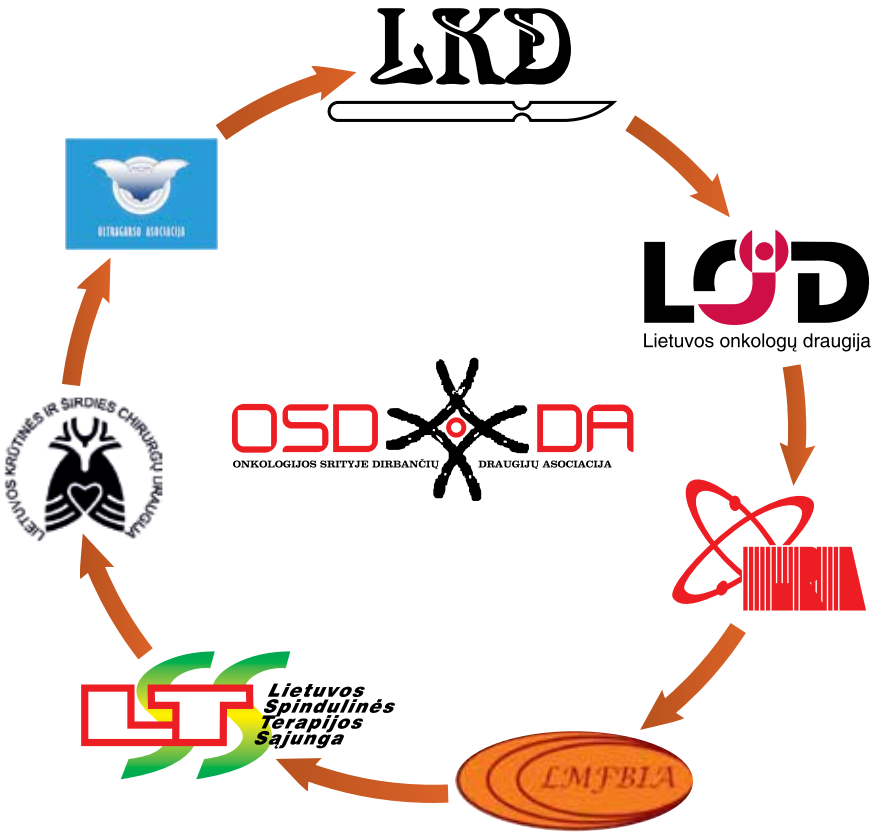
Already 20 years have passed from our first meeting in Tallinn. A lot of changes happened during this relatively short time - both science and practice in Oncology have made a very big step forward. That is why it is so important for those professionals involved in cancer care to communicate, share knowledge and experience in fields of prophylactics, diagnosis and treatment in the light of newest scientific achievements. Our aim is to introduce new technologies and approaches, deliver updates on ongoing trials and projects in oncology worldwide, as well as discuss implementations of these progressive steps in the Baltic states and other countries. This congress is perfect possibility to meet once more and continue tradition of collaboration in the fight with our common enemy – oncologic diseases, to discussing important health care questions, finding solutions and last, but not least - new contacts.

We are kindly inviting you to our beautiful city of Vilnius to participate at the 6th Baltic Congress of Oncology, to be held on October 3-4, 2014. Congress venue is chosen to fit best the social part of the meeting - hotel Artis is located in the very heart of old town of medieval Vilnius, near the headquarters of our President, famous Vilnius University and most of the other important city attractions.

Yours –

PROF. NARIMANTAS EVALDAS SAMALAVICIUS
President of the 6th Baltic Congress of Oncology
Director of the National Cancer institute

CONGRESS PARTNERS





Lithuanian Society of Coloproctologists President
N. E. Samalavicius



Lithuanian Society of Ultrasound President
A. Ulys



Lithuanian Society of Thoracic and Heart Surgeons Vicepresident
S. Cicenas



Lithuanian Association of Medical Physics and Engineering Vice President
V. Atkocius



Lithuanian Society of Oncology Director
D. Norkus



Lithuanian Radiology Association, Vilnius region committee, Chief
R. Grigiene





On behalf of Association of Oncology Societies I am glad to welcome 6th Baltic Congress of Oncology in Vilnius, Lithuania. In this high level event invited speakers and colleagues will share news about clinical aspects, tendencies of scientific research, best practice and innovations and their influence on health and outcomes .

This congress is a place for ideas, scientific thoughts and delivery of experience. It is a way to meet people - clinicians, scientists, other specialists involved in Cancer diagnosis, follow-up - it is a possibility for encouraging and smart interpretation of scientific knowledge and the way of their implementation in practice.

It is especially important that we have possibility to share the knowledge with professionals from different countries. Best greetings for all participants from Lithuania and abroad.

Partnership of Baltic oncologists for many years enables implementation of scientific practical projects- traditional meetings, which gives perfect opportunity for innovative ideas and ways to solve them, from which ones are already fulfilled, for others-scientific and medical society is still waiting.

I believe that 6th Baltic Congress of Oncology will be a platform for science and practice-for continuity of started works, to hear news and meet persons who are eager to make changes and you all will be the part of these events.

Wishing you all productive work, meeting old friends and making contacts with new colleagues.

The Association of Oncology Societies and Lithuanian Society for Radiotherapy President ***E. JANULIONIS***

Lietuvos Spindulinės Terapijos Sąjunga

OSDA ONKOLOGIJOS SRITYJE DIRBANČIŲ DRAUGIJŲ ASOCIACIJA

PROGRAMME

FRIDAY, OCTOBER 3

9.00 – 10.15 REGISTRATION & OPENING (COFFEE/TEA)

9.00 – 10.15 Registration & Exhibit hall open

10.00 – 10.15 Welcome address:
- *Minister of Education & Science D. Pavalkis*
- *Director of the National Cancer Institute N. E. Samalavicius*
- *President of the Association of Oncology Societies E. Janulionis*

10.15 – 10.30 Cancer situation in Estonia.
I. Oro (Estonia)

10.30 – 10.45 Cancer situation in Latvia.
D. Baltina (Latvia)

10.45 – 11.00 Cancer situation in Lithuania.
N. E. Samalavicius (Lithuania)

11.00 –13.00 PLENARY SESSION "BREAST CANCER"
MODERATORS: V. Ostapenko (Lithuania), E. Juozaityte (Lithuania)

11.00–11.20 Evolution of breast cancer axillary surgery.
V. Ostapenko (Lithuania)

11.20–11.40 Bone health in breast cancer care.
E. Juozaityte (Lithuania)

11.40–11.55 Ductal carcinoma in situ: news in diagnostic and treatment.
D. Gudaviciene (Lithuania)

11.55–12.15 Oncoplastic breast surgery: possibilities, techniques, outcomes.
S. Joukainen (Finland)

12.15–12.30 Should axillary dissection be avoided in patients with positive sentinel node – opinion of medical oncologist.
S. Liutkauskiene (Lithuania)

12.30–13.00 Original and biosimilar antibodies: considerations for oncologists.
H. Mellstedt (Sweden)

13.00 – 14.00 LUNCH IN THE HOTEL "ARTIS" RESTAURANT "LA TRAVIATA"

11.00 –16.00 PLENARY SESSION "PATIENTS ADVOCACY"
MODERATORS: S. Narbutas (Lithuania), E. Tomberg (Estonia)

11.00–11.20 Europacolon experience in improving colorectal cancer outcomes in Central Eastern European countries.
Z. Maravic (Serbia)

11.20–11.40 Europa Donna activities in Estonia and some experiences from other countries.
E. Tomberg (Estonia)

11.40–12.00 Directions of patients organizations in Lithuania.
S. Narbutas (Lithuania)

12.00–12.20 The role of cancer patient organizations in achieving a national cancer control strategy in Sweden.
I. Kossler (Sweden)

12.20–12.40 Improvement of communication skills for specialists working in oncology field in Lithuania.
G. Bulotiene (Lithuania)

12.40–13.00 Cancer information center: idea, reality, challenges.
V. Mickeviciene (Lithuania)

13.00–14.00 LUNCH

14.00–14.20 Activities of St. Francis oncology center.
A. Kerpyte (Lithuania)

14.20–14.40 Impression and experience: why oncopsychosocial help is important for me?
S. Mikulioniene (Lithuania)

14.40–15.00 Impact of colors for health.
D. Brogiene (Lithuania)

15.00–15.20 The role of architecture and art for healing.
R. Surviliene, I. Petkute (Lithuania)

15.20–15.40 The role of patients organizations in health policy. *G. Zizys (Lithuania)*

15.40–16.00 Discussion

14.00 – 16.00 PLENARY SESSION "LUNG CANCER"
MODERATORS: S. Cicenas (Lithuania), E. Danila (Lithuania)

14.00 – 14.15 Implication of DNA repair system genes expression and polymorphisms in resected NSCLC.
R. Askinis, D. Schveigert, S. Cicenas (Lithuania)

14.15 – 14.30 Lung cancer in never smokers.
G. Ostoros (Hungary)

14.30 – 14.45 Chemoterapy and targeted therapy in NSCLC.
M. Zemaitis (Lithuania)

14.45 – 15.00 Concurrent chemoradiation therapy of lung cancer – toxicity and efficacy profile: a single–insti-tution experience of 32 patients.
V. Kozirovskis (Latvia)

15.00 – 15.15 Tracheobronchial sleeve resections in the practice of North Estonia Medical Center.
T. Vanakesa (Estonia)

15.15 – 15.30 Treatment locally advanced or metastatic EGFR mutated NSCLC. Lithuanian experience.
A. Cesas, A. Bankauskaite (Lithuania)

15.30 – 15.45 Novel strategies in Lung cancer biomarker research.
A. Spaks (Latvia)

15.45 – 16.00 Faces of NSCLC in the era of molecular pathology.
A. Simbelyte (Lithuania)

14.00 – 16.00 PLENARY SESSION "NURSING"
MODERATORS: A. Grebliuniene (Lithuania), J. Bulotaite (Lithuania)

14.00 – 14.15 Regulation of nursing science and practice in Lithuania.
N. Bieliniene, A. Grebliuniene (Lithuania)

14.15 – 14.35 The best supportive care: challenges, problems and experience in St. Christoper's hospise in Warsaw.
K. Pietruk (Poland)

14.35 – 14.55 Peculiarities of care for patients with neurotoxicity during chemotherapy.
A. Jeluskina (Latvia)

14.55 – 15.15 Patient`s safe lifting recommendations for employees.
L. Gudeliene – Gudeleviciene (Lithuania)

15.15 – 15.30 Quality of life breast cancer patients taking adjuvant hormonotherapy.
O. Eigeliene (Lithuania)

15.30 – 15.45 Features of oncology care for patients after chemotherapy in day unit.
D. Zadorockiene (Lithuania)

15.45 – 16.00 Analysis of postoperative period term care problems of patients with laryngeal cancer.
O. Seletiene (Lithuania)

16.00 – 16.30 COFFEE/TEA IN THE EXHIBITION AREA

16.30 – 18.00 PLENARY SESSION "MISCELLANEOUS I"
MODERATORS: K. P. Valuckas (Lithuania), R. Grigiene (Lithuania)

16.30–16.45 Cancer pain relief – problems and successes.
D. Skorupskiene (Lithuania)

16.45–17.00 Intraobserved and interobserved variability in GTV delineation on PET/CT and CT of head and neck cancers.
V. Rudzianskas, V. Simonyte (Lithuania)

17.00–17.15 Evolution of the response to the treatment in oncology.
R. Grigiene (Lithuania)

17.15–17.30 What is your excuse NOT to use minimal invasive approach? Advantages, limitations and pitfalls of laparoscopic, robotic and open surgery in treatment of gynecological cancer.
A. Markauskas (Denmark) vs
V. Rudaitis (Lithuania)

17.30–17.45 Treatment options in progressive or recurrent ovarian cancer.
S. Tulyte (Lithuania)

17.45–18.00 The role of sentinel lymph node biopsy in diagnosis and treatment of early stage squamous cell vulvar carcinoma.
K. Zilinskas (Lithuania)

18.30 – 22.00 DINNER AT THE RESTAURANT „LA BOHEME"
(Sv. Ignoto str. 4/3, Vilnius)

SATURDAY, OCTOBER 4

9.00 – 11.00 **PLENARY SESSION "UROLOGICAL CANCER"**

MODERATORS: A. Ulys (Lithuania), M. Jievaltas (Lithuania), L. Kukk (Estonia)

9.00 – 9.15 Cryotherapy for prostate and renal cancer treatment.
P. Baum, L. Kukk (Estonia)

9.15 – 9.30 Percutaneus radiofrequency ablation and cryotherapy of renal tumors.
M. Trakymas (Lithuania)

9.30 – 9.45 Histoscanning – new perspectives in cancer diagnostics and treatment.
A. Karulis (Latvia)

9.45 – 10.00 Identification and individualization of non–muscle invasive bladder cancer treatment.
M. Kivi (Estonia)

10.00 – 10.20 Role and benefits of HIFU in localized prostate cancer.
S. Thueroff (Germany)

10.20 – 10.45 Treatment of high risk prostate cancer.
St. Joniau (Belgium)

10.45 – 11.00 Using novel therapies of patients with metastatic castration–resistant prostate cancer.
M. Jievaltas (Lithuania)

9.00 – 11.00 **PLENARY SESSION "MISCELLANEOUS II"**

MODERATORS: Z. Gudleviciene (Lithuania), D. Venskutonis (Lithuania)

9.00 – 9.15 Treatment of metastatic renal cell cancer in the era of targeted therapies – hype and hope.
V. Kataja (Finland)

9.15 – 9.30 Stem cell biobanking and bioproduction in the GMP condition: perspectives for clinical use.
M. Jurga (Belgium)

9.30 – 9.45 Colorectal cancer surgery complication risks.
A. Oeselg (Estonia)

9.45 – 10.05 Antiproliferative effects of SSA and CLARINET results. What does CLARINET add.
J. Capdevila (Spain)

10.05 – 10.20 Cancer – promoting effects of cancer treatment.
D. Characiejus (Lithuania)

10.20 – 10.45 Photodynamic therapy of cancer: towards nanotechnology.
R. Rotomskis (Lithuania)

10.45 – 11.00 Situation of Oncology in Kazakhztan.
D. Kaidarova (Kazakhztan)

11.00 – 11.30 **COFFEE/TEA IN THE EXHIBITION AREA**

11.30 – 13.00 **PLENARY SESSION "GASTROINTESTINAL CANCER"**

MODERATORS: N. E. Samalavicius (Lithuania), D. Norkus (Lithuania)

11.30 – 11.45 Full response after chemoradiation for rectal cancer.
N. E. Samalavicius (Lithuania)

11.45 – 12.00 Colorectal cancer: hereditary colorectal cancer diagnosis in the next generation sequencing era.
A. Alonso (Spain)

12.00 – 12.15 Laparoscopy for rectal cancer in 2014.
B. Bashankaev (Russia)

12.15 – 12.30 Episodes of GI cancers in Yazd province 2005–2010: a data linkage study.
M. Mirzaei (Iran)

12.30 – 12.45 Early detection of rectal cancer in Lithuania: possibilities and challenges.
T. Poskus (Lithuania)

12.45 – 13.00 Role of biomarkers in systemic treatment of colorectal cancer.
E. Baltruskeviciene (Lithuania)

13.30 – 15.30 **PLENARY SESSION "MISCELLANEOUS II"**

MODERATORS: Z. Gudleviciene (Lithuania), D. Venskutonis (Lithuania)

13.30 – 13.50 Screening programmes in Europe.
A. Anttila (Finland)

13.50 – 14.10 Cancer screening challenges. Case of Lithuania.
R. Ivanauskiene (Lithuania)

14.10 – 14.30 Survival of cancer patients in Europe.
M. Bielska-Lasota (Poland)

14.30 – 14.45 Neuroendocrine tumours: where are we now in Lithuania.
R. Janciauskiene (Lithuania)

14.45 – 15.00 Biobanking in Lithuania: past, present, future.
Z. Gudleviciene (Lithuania)

15.00 – 15.15 New advances in metastatic melanoma treatment.
A. Cesas (Lithuania)

15.15 – 15.30 Nanomedicine - how far we will go?
V. Karabanovas (Lithuania)

15.30 – 16.00 **CLOSING REMARKS**





ORAL ABSTRACTS

IMPLICATION OF DNA REPAIR SYSTEM GENES EXPRESSION AND POLYMORPHISMS IN RESECTED NSCLC

Renatas Askinis[1, 2], Diana Schveigert[1], Saulius Cicenas[1, 2]

1 National Cancer Institute, Vilnius, Lithuania
2 Faculty of Medicine, Vilnius University, Vilnius, Lithuania

Introduction. Many steps in carcinogenesis of non-small cell lung cancer (NSCLC) and contributing risk factors have been identified, although no consistent model has been established of personalized treatment for the patients. It is expected that molecular studies will help to identify new biomarkers for NSCLC that would allow clinicians to diagnose the disease quicker, to select more specific treatment and predict the effectiveness of treatment. DNA repair genes ERCC1 and RRM1 are involved in NSCLC carcinogenesis by influencing DNA repair capacity. Mutations in the DNA repair system genes ERCC1 and RRM1 influence resistance to chemotherapy.

The aim of this study was to investigate ERCC1 and RRM1 gene expression and polymorphism in these genes in relation to clinicopathological parameters and clinical outcome of NSCLC patients.

Materials and methods. 50 patients with histopathologically diagnosed NSCLC were enrolled to the study. Patients were treated at Department of Thoracic Surgery and Oncology at Institute of Oncology, Vilnius University. DNA was extracted from whole blood using „QIAamp DNA Blood Mini Kit" (Qiagen, Germany). ERCC1 (118 codon C→T), RRM1 (-37 C→A), RRM1 (-524 C→T) polymorphisms were analyzed by PCR-RFLP method. RNA was extracted from fresh frozen tumor tissue using QIAzol Lysis reagent (Qiagen, Germany). ERCC1 and RRM1 expression was performed by qRT-PCR. The present study was approved by the Lithuanian Bioethics Committee.

Results. All polymorphisms in DNA repair genes were detected. Polymorphisms were evaluated according to disease stage, tumor differentiation grade, histological type and lymph node status. Significant association between disease stage and ERCC1 (118 codon C→T) polymorphism was found (p=0,01). There were no statistical correlations between other polymorphisms and clinicopathological parameters. Low RRM1 expression was more frequent in squamous cell carcinoma (p=0,01). Kaplan-Meier estimates demonstrated that lymph node negative NSCLC patients with low RRM1 expression had a significantly longer survival than lymph node negative patients with high RRM1 expression (p=0,04). Overall survival analysis didn't show statistically significant relation between ERCC1 expression and clinicopathological parameters.

Conclusions. Such genes as ERCC1 and RRM1 should be further evaluated as potential biomarkers for the prediction of clinical outcome of NSCLC patients in the future. Additional studies with larger population should be done.

ROLE OF BIOMARKERS IN SYSTEMIC TREATMENT OF COLORECTAL CANCER

Edita Baltruskevičiene[1], Eduardas Aleknavicius[1, 2]

1 National Cancer Institute, Vilnius, Lithuania
2 Faculty of Medicine, Vilnius University, Vilnius, Lithuania

Background and objective. Combinations of chemotherapeutic drugs and targeted agents has improved colorectal cancer treatment outcomes greatly over past ten years. Unfortunately, it is associated with increased toxicity, treatment costs and limited efficacy in selected groups of patients. That generates the need of prognostic and predictive markers which would help to personalize treatment.

Material and methods. This abstract aims to summarize existing data regarding molecular markers that could predict response to treatment of CRC.

Results. Mutations of RAS oncogenes (KRAS, HRAS, NRAS) are common in CRC. KRAS exon 2 (codons 12 and 13) mutations has been indentified as negative prognostic and predicting factor for anti-EGFR therapy. Recently negative predictive and prognostic value of KRAS exon 3 and 4 and NRAS mutations was also established. Studies of biomarkers for anti VEGF therapy involved plasma and tumour expression of VEGF and related pathway components, circulating tumour cells, circulating endothelial cell, KRAS/BRAF gene mutation status or polymorphisms affecting components of the VEGF pathway. Only polymorphisms of some VEGF genes predicted PFS and ORR in one small sample study and this need to be proved in larger sample size. Thymidylate synthase (TS), dihydropyrimidinedehydrogenase (DPD), thymidine phosporylase (TP) showed to predict efficacy and toxicity of fluoropyrimidines but due to different methodologies and conflicting results they are not widely used. Microsatelite instability (MSI) is considered to be a strong prognostic and predictive marker. MSI-H tumours are assocciated with longer OS and decreased metatstatic potential, and do not benefit from adjuvant therapy with fluoropyrimidines. ERCC1 by IHC, RT-PCR, or genotyping predicted a poor outcome in patients with colorectal cancer treated with oxaliplatin based chemotherapy, but due to conflicting data only high ERCC1 by RT-PCR seems to be a promising biomarker. There is a high interest in testing predictive value of RAS genes and miRNA for oxaliplatin based therapy.

Conclusion. Despite of great activity in this field only a few of such markers has been implemented in clinical practice. They are KRAS and NRAS mutation testing for anti-EGFR therapy and MMR status testing for adjuvant treatment of stage II colon cancer. Future research is neccesary to elucidate all possible biomarkers in order to choose the optimal strategy for the patients.

CURRENT STATUS OF LAPAROSCOPY FOR RECTAL CANCER

Badma Bashankaev, MD

Chief of Colorectal Surgery of EMC, Moscow, Russia

Since the introduction of the laparoscopy in colorectal surgery most of the open procedures have been reproduced in minimal invasive way. Very few of the colorectal cases were considered as a complex and excluded from the investigational trials. Rectal cancer was always a challenging topic both for open and laparoscopic surgeons.

It is one the most controversial areas of laparoscopic colorectal surgery. This is related to the perception that it is more challenging than colon resection in achieving radical cancer surgery within the complex anatomy of the pelvis. Multiple studies have shown the technical feasibility of laparoscopic sphincter-preserving total mesorectum excision (TME) for rectal cancer but the owing to difficulties of pelvic exposure, rectal dissection and sphincter preservation. These issues are leading to a higher rates of conversion, morbidity when compared to laparoscopic colon surgery.

Since 1991 many RCT studies comparing open and laparoscopic resections have shown the equal and superior outcomes in terms of morbidity, mortality, short term and long term oncologic outcomes. Updated COST, COLOR, COREAN trials, meta-analyses show improvement in cosmesis/physiological recovery, reduction of time to first bowel or stoma movement, time to oral, independent mobilization and hospitalization time. There is a substantial evidence that laparoscopy in rectal cancer in experienced hands is resulting in improvement blood loss /transfusions, pain, rates of adhesions / bowel obstruction, hernia formation, better immune response, decreased cost, improvement of the survival in Stage III patients.

Laparoscopic rectal excision is an additional minimally invasive tool in the hands of high volume experienced laparoscopic surgeons. It is not a mandatory rule to finish the case in a laparoscopic way, the higher priority is a patient's safety. Following Heald's principals of TME as in open surgery and providing adequate oncologic outcomes, the laparoscopic approach has additional benefits such as better recognition of pelvic planes due to camera magnification, less immunosuppressive effects and better short-term outcomes.

Current evolutional status of laparoscopic rectal cancer is related to the progress in surgical expertise with better understanding of the anatomy, laparoscopic equipment, ongoing researches and dedicated approach in neoadjuvant chemotherapy or chemoradiotherapy. Steep learning curve, surgeon experience and competence in laparoscopic rectal surgery have a major impact on oncological and other perioperative outcomes. This resulted American Society of Colon and Rectal Surgeon, the Society of Gastrointestinal and Endoscopic Surgeons, European Association of Endoscopic Surgery to recommend that laparoscopy for rectal cancer should be utilized by expertly trained surgeons in institutions where the outcomes can be meaningfully evaluated.

REGULATION OF NURSING EDUCATION AND PRACTICE IN LITHUANIA THE SUMMARY OF THE REPORT

Nijole Bieliniene, Aldona Grebliuniene

National Cancer Institute, Vilnius, Lithuania

The aim of the report. To familiarize nurses with the legislative acts governing the regulation of nursing education and practice in Lithuania.

In Lithuania nursing has been recognizedas as a part of the biomedical sciences. The nursing profession is a state regulated profession. This profession is regulated in all European Union countries, which means that all countries qualifying general practice nurses must be guided by the Directive 2005/36/EB" The Recognition of Professional Qualifications". The 31st article of the Directive determines the training of general practice nurses and the Annex of the Directive identifies the necessary elements required in the general practice nurse training program.

Keywords: general practice nurse, nursing services.

Results. In Lithuania all the necessary legislative acts governing nursing education and practice are prepared. The main law for nurses is the Law of the Republic of Lithuania on Nursing Practice adopted in 2001. Six legal acts implementing the law have been prepared, the licensing for nurses and midwives has been launched. As the requirements changed, on July 14, 2009 a new version of the Law on Nursing Practice and Midwifery Practice of the Republic of Lithuania (XI - 343) was adopted. In order to implement this law, six legislative acts were prepared and validated; i.e. nursing specialization, previously acquired professional qualifications equating to general nursing practice qualification, midwifery practice licensing rules and so on. Specialized nursing fields are regulated by medical standards which determine nurses' competence typical of these fields.

In accordance with European Parliament and Council Directive 2005/36/EB, on April 3, 2008 the Law on the Recognition of Regulated Professional Qualifications of the Republic of Lithuania (X - 1478) was adopted. There are also common legislative acts, which in various aspects reflect nursing activities. It will be presented in the report .

Conclusions. Since in Lithuania all the necessary legislative acts governing nursing education and practice are nearly prepared, it is appropriate to implement them developing nursing practice.

CRYOTHERAPY FOR PROSTATE AND RENAL CANCER

P. Baum, L. Kukk

Division of Urology, Clinic of Surgery, North-Estonia Medical Centre, Tallinn, Estonia

Cryoablation (CA) has been used to treat human cancers since the 19th century. Freezing and thawing causes alteration in various biological processes that ultimately results in cell death.

Cryosurgery for kidney cancer (CSAK)

CA targets specific cells and spares surrounding tissues, which can be critical in patients with impaired renal function and in small renal cell carcinomas (RCC). As a result, renal cryoablation, either percutaneous or laparoscopic, has become a feasible and promising minimally invasive surgical option for the treatment of small renal masses. In the last few years, several series have reported the results of CA for small tumors with short to intermediate follow-up intervals.

Since 2008, in our institution laparoscopy assisted cryotherapy for small renal tumors was successfully performed in 22 patients. Intraoperative biopsy confirmed renal cell carcinoma in sixteen patients, oncocytoma in three patients and it was inconclusive in three cases. The only intraoperative complication was bleeding after removal of the cryoprobes in one patient. Three of our patients presented postoperative complications: one patient with significant haematuria managed by ureteral stent, one patient with episode of cardiac arrhythmia and one patient needed a blood transfusion postoperatively. No other complications were observed. During a mean follow-up of 34 months (range: 2-69) one patient had histologically proven local recurrence, the remaining 21 patients had no evidence of local recurrence.

Cryosurgery for prostate cancer (CSAP)

Technological advancements have reduced the morbidity associated with cryosurgery, leading to an increased interest in this modality for the treatment of organ-confined prostate cancer. Considerable technological improvements in cryotherapy including gas-driven miniaturized equipment, ultrasonographic ice-ball monitoring, and the use of thermal sensors have allowed more efficient freezing of the prostate gland while reducing collateral damage to surrounding tissues. These improvements have led to decreased morbidity and a resurgence of cryotherapy for primary treatment of prostate cancer. With regard to third-generation cryosurgery, clinical follow up is still limited. Seven-year biochemical disease-free survival (BDFS) after the cryosurgery for low-, medium-and high-risk groups of prostate cancer at 61%, 68% and 61%, respectively, has been reported in the literature.

Eight CSAP procedures were succsesfully performed for low-, intermideate and high risk-groups (D`Amico risk score) of prostate cancer patients at our institution. Treatment success was defined by achievement of a PSA nadir of < or =0.1 ng/mL and by BDFS assessed with both a PSA threshold of < or =0.4 ng/dL over time. Biochemical relapse was detected in five patients. During a mean follow-up of 42 months (range: 6-65 mo) hormonal therapy was applied in one patient (high risk group patient) and all patient with PSA relapse are still on active surveillance (last PSA level was 0,49-1,8 ng/ml). We kept the suprapubic catheter after procedure during 14 days in addition to prophylactic antibiotics, α-blockers and NSAIDs. One patient had postoperative urinary tract infection, hematuria and urinary retention that required suprapubic catheter for 99 days and transurethral resection of prostate (TURP).

In this review on the role of ablative techniques in renal and prostate cancer, we discuss the principles and methods of delivery of cryotherapy, appropriate patient selection and oncological outcomes in this newly developed field.

COMMUNICATION SKILLS TRAINING FOR ONCOLOGY STAFF IN LITHUANIA

Giedre Bulotiene

National Cancer Institute, Vilnius, Lithuania

Introduction. Lithuania has not yet developed any communication skills training (CST) program for health care professionals working with cancer patients.

Objectives. The aim of the project was to develop and test a CST module for doctors, nurses and other health professionals working in oncology

Methods. CST based on Swiss experience was provided for 6 Lithuanian trainers psycho-oncologists. The CST module was developed with the special focus on emotion handling and breaking bad news in oncology. The 16h CST program included video-analysis, role plays and practicing in small groups.

Results. In 2013-2014 we provided intensive two day workshops for ten groups of oncology doctors and nurses involving 164 participants. Each workshop was given by two trainers. The experiential CST module will be presented and discussed.

Conclusions. The new CST module is an effective tool for teaching communication skills. Future research is required to assess the impact of the CST on doctor-patient relationships in order to support the implementation of the CST in the national system of cancer care.

References: Project funded by the Lithuanian-Swiss cooperation programme.

CANCER-PROMOTING EFFECTS OF CANCER TREATMENT

D. Characiejus[1], J. Hodzic[2], J. J. L. Jacobs[2]

1 Faculty of Medicine, Vilnius University, Vilnius, Lithuania
2 VU University Medical Centre, Amsterdam, The Netherlands

Present cancer treatment strategies are based on the assumption that a therapy may work (“response”) or not work (“no-response”). However, the existing evidence suggests that current cancer treatment modalities may also have a cancer-promoting effect in part of the patients. Some relevant data will be reviewed in the presentation, suggesting that surgery, irradiation, chemotherapy and immunotherapy can stimulate tumour growth or metastatic spread and decrease survival of patients in certain subgroups. Thus, results of cancer treatment may be improved by detection and use of biomarkers that correlate with positive or negative therapeutic effects. Small trials based on groups with differing biomarkers rather than large phase III trials may aid the development and efficacy testing of new anticancer drugs. Moreover, ignoring biomarkers that correlate with positive or negative therapeutic effect may not be compatible anymore with the ethical principle “First Do No Harm”.

QUALITY OF LIFE OF PATIENTS BREAST CANCER PATIENTS TAKING ADJUVANT HORMONOTHERAPY

Olga Eigeliene, Ramute Andrasiene

National Cancer Institute, Vilnius, Lithuania

Aim of the research. To evaluate the quality of life of women, suffering from hormone-dependent breast cancer and receiving adjuvant hormonotheraphy (HT)

Tasks of the research. Study tasks were to establish the peculiarities of quality of life according to socio-demographic factors, disease characteristics, areas of the quality of life and the impact of anxiety and depression on the quality of life in women, suffering from hormone-dependent breast cancer and receiving adjuvant hormonotherapy and a group of women who are not subjected to such a treatment.

Materials and Methods. A survey was conducted with a participation of 232 breast cancer patients treated at the Outpatient Clinic of the Institute of Oncology of Vilnius University. Several standard questionnaires were used to measure quality of life in breast cancer patients, including EORTC QLQ-C30 and its breast cancer specific complementary measure EORTC QLQ-BR23, compiled by the European Organisation for Research and Treatment of Cancer, supplemented with 15 extended questions concerning socio-demographical data and the disease characteristics. To determine the level of anxiety and depression the Hospital Anxiety and Depression Scale was used, while the results were obtained using the SPSS software for the statistical data analysis.

Results. The following types of analysis were conducted during the course of research: a comparative study of sociodemographic data, the characteristics of the disease, areas and symptoms of the quality of life, the average mean of the impact of anxiety and depression on the quality of life and its standard deviation as well as the correlation analysis in both groups of study. It has been established that the quality of life of women, suffering from breast cancer and receiving and not receiving adjuvant hormonotheraphy depends on the age, education and their family status (i.e. whether they have children or not). The common quality of life ($p < 0.05$) in the HT receiving group depends on education. The physical health mostly depends on higher education in the HT non-receiving group as well. Pain and unpleasant symptoms in the breast after the treatment primarily affect the quality of life of unemployed women, of those who do not receive HT treatment and those who have children under 18 years of age. As regards characteristics of the disease, chemotheraphy (p=0, 017) has produced the greatest impact on the quality of life of women suffering from breast cancer: women who received HT experienced more health problems than women who were not treated with HT. The assessment of different areas and symptoms of quality of life has shown that prescription of the HT has an adverse effect on the quality of life of these women, irrespective of the disease recurrence prevention effect. Anxiety and depression also affect the quality of life of women receiving HT the most.

Conclusions. The quality of life of HT receiving women is worse than that of women who are not subjected to HT treatment.

LUNG CANCER IN NEVER SMOKERS

Gyula Ostoros

National Koranyi Institute of TB and Pulmonology, Budapest, Hungary

Lung cancer in never smokers (LCINS) plays a significant role in lung cancer mortality and it is the seventh leading cause of death among solid tumors. Although the main risk factor for lung cancer is smoking, approximately 15% of the patients have never smoked. LCINS is more frequent in women irrespective of geographical location; nevertheless, the highest incidence has been found in South-East Asia. The histological incidence of adenocarcinoma is higher in the group of never smokers than squamous cell carcinoma, while in the smoker subpopulation this pattern is reversed. There is a familial clustering of lung cancer that is more pronounced in never smokers, where the family history was associated with an increased risk. Genome-wide association studies identified certain chromosomal aberrations in LCINS. Furthermore, the oncogenic mutation pattern is distinct in non-smoking patients: activating mutations of EGFR or ALK are more frequent. The aetiology of LCINS includes several environmental factors as well, such as environmental tobacco smoke, viral and hormonal factors, a variety of pulmonary diseases and certain occupational exposures. Lung cancer patients, who have never smoked seem to have better prognosis and an increased survival, mostly owing to the overall bet¬ter performance status and the lack of smoking related comorbidities. It is now established that EGFR-tyrosine kinase inhibitor treatment (erlotinib, geftinib, afatinib in lung cancer is more effective in LCINS, due to the higher incidence of EGFR mutation in nonsmokers. Emerging data strongly suggest that EGFR-TKI therapy should be considered as first-line treatment in patients with EGFR mutations. There are very promising data with ALK inhibitor therapy in the case of EML4-ALK positive lung cancer. Despite the growing body of information on LCINS in recent years there is a need to further investigate the pathogenesis of this particular lung cancer. Future studies on LCINS should try to tackle the issues of novel therapeutic targets to combat lung cancer disease.

DUCTAL CARCINOMA IN SITU: NEWS IN DIAGNOSTIC AND TREATMENT

Daiva Gudaviciene

National Cancer Institute, Vilnius, Lithuania

Breast carcinoma in situ (CIS) - non invasive breast cancer – is heterogeneous group of disorders, different by its clinical manifestations, course and prognosis. This group of diseases is rapidly increasing due to its successful detection through the national mammographic screening programs and a wider use of new radiological tests (such as MRI). It is indicated that the incidence of an invasive breast cancer remains stable, and the detection of ductal carcinoma in situ (DCIS) is 2.5% higher annually. In 1980-1995s in Western European countries the frequency of DCIS increased by 4 times, especially among "screening" age women. 20% of all detect cancers through preventive checks are DCIS. Previously, DCIS was rarely detected, in the cases when women applied due to a palpable breast lump or the pathological discharge from the nipple, sometimes lesions were random detected by a biopsy. Recently, DCIS is often observed in women with no complaints through screening mammography which reveal micro-calcifications. It is supposed that only about 15% of DCIS is symptomatic also it is emphasized that even if DCIS is symptomatic in as much as 20-25% cases micro-invasion is found.

Pre-invasive changes may not progress. The overall rate in progression of an invasive breast cancer (BC) varies from 14% to 75%. An increased risk in breast cancer (BC) was observed in any grade of lesions, but the period of development of an invasive disease is longer in low-grade lesions. A significant part of the CIS has not an aggressive course. These days, the task is to distinguish clinically significant lesions and to choose an individual, adequate but not too aggressive treatment.

The Gold standard for the diagnosis of CIS is mammography and stereotactic biopsy. Prospective studies indicate that MRI is significantly a more sensitive assay for DCIS compared to mammograms (92% vs. 56%). However, it is also known that after the pre-operative MRI, relapse rates remained the same as in the operated cases without MRI. The size of visible lesions detected by mammograms is very important, as it correlates with the local relapse rate. When treating smaller than 10 mm DCIS lesions the frequency of relapse during the 10 years is 11%, and at greater than 10 mm lesions, the incidence of relapse rises to 48%. It is essential to remove all area of lesions. A lot of discussion is raised due to the "clear surgical margins" issue. Standards in this regard are very different from country to country and clinics, but the majority agree that the resection margin for DCIS should be broader than in case of an invasive cancer. There are also in different clinics different indications to re-operations, breast-conserving surgery and mastectomy of DCIS patients.

In DCIS surgery, it is important to remove all lesions and have a sufficient clear margin. In order to assess lesions it is important to have preoperative histological diagnosis and choose an adequate type of operation. In case of a surgery of minor lesions it is enough to have a local excision. In the treatment of larger DCIS more frequently oncoplastic surgery is used; it is indicated that after such operations as much as 94% of women are satisfied with the aesthetic view. In case of massive DCIS, the standard is subcutaneous mastectomy and immediate reconstruction. In DCIS in different clinics in 40-80% cases breast-conserving surgery is performed.

Another important question is a re-operation rate. 30-40% of CIS patients are re-operated: 26% of which are due to the compromised margins, the rest part is due to the discovery of an invasion. Margin probe can be used in assessing the margins of the resection, as it use reduces the re-excision rate from 39 to 17%. Invasions more are frequent if lesions are palpable or if micro-calcifications present with breast parenchyma density.

Another debatable issue is whether in case of DCIS surgery sentinel lymph node biopsy is necessary. This procedure is performed in 20-60% cases of DCIS patients in different clinics. It is also noted that as many as 9% of patients operated because of large DCIS have metastases in sentinel lymph nodes. Sentinel lymph node metastases are more often detected when micro calcifications present with breast parenchyma density and in patients with high body mass index.

DCIS is sometimes associated with lobular carcinoma in situ (LCIS). Once DCIS and LCIS are found, invasive carcinoma develops more frequently (67% vs. 43%). The ER and PR positive CIS lesions have a more benign course, and are precursors of ER and PR positive invasive cancers, and hormone negative CIS lesions progress to the ER and PR negative breast cancers. HER2-positive or ER / PR negative noninvasive lesions are associated with a poorer prognosis, an increased recurrence rate.

DCIS treatment is quite controversial as currently there is no reliable marker or method to accurately distinguish lesions that may behave aggressively, and which of them could only be observed.

The DCIS recurs within 5 years among 7-10% of patients. Half of recurrence of DCIS is invasive. In 50% of cases of DCIS recurrence, mastectomy is performed.

It was found that after DCIS treatment relapse rates can be reduced if women do not consume alcohol, and for premenopausal women it is essential to maintain a lower body mass index.

At the National Cancer Institute in years 2001-2013is 434 0 stage breast cancer patients were operated, and numbers are increasing each year: 12 patients with stage 0 breast cancer were operated in 2001; in 2002 - 11, 2005 -29, 2008- 24, 2010 - 44, 2012- 54, 2013 - 60. In 55 cases mastectomies were performed, for the other - a breast-conserving surgery; sentinel lymph node biopsy was performed to – 35 women.

PRACTICAL IMPLEMENTATION OF ALGORITHMS OF PATIENT SAFE LIFTING STANDARD

Loreta Gudeliene-Gudeleviciene

Department of Training and Programs, Center of Professional Training and Specialization of Nurses, Vilnius, Lithuania

Introduction. Diseases of connected tissues and musculoskeletal system caused by improper patient lifting is a serious heals problem in health professionals in Lithuania. Patient safe lifting standard ensures safer work environment for health professionals, prevents patient from additional pain and discomfort. It does not requires additional staff (four algorithms provide lower number of staff) and time.

Goal of the research. To evaluate practical applicability of algorithms of patient lifting.

Objectives:

1. Compare duration of lifting procedures completed without algorithm and using lifting algorithm.
2. Compare number of staff necessary for patient lifting provided by algorithms and number of staff necessary to perform lifting procedure not using lifting algorithm.
3. Compare well-being of patients and staff when lifting algorithms are not used and lifting procedures are performed according to algorithms.

Methods. Research was carried out using observation methods. Two types of checklists were developed. One was used to record results of patient lifting without lifting algorithms, and another was used to record results of patient lifting using lifting algorithms.

A total of 122 patients were enrolled into research, and 3413 checklists were analyzed.

Results. Comparison of duration of lifting procedures completed without and with algorithm showed no significant differences (8 minutes; 14 minutes for walking).

Need for staff was compared within 8 lifting positions (standard provides 8 algorithms and 7 algorithms for heavy patients). Staff number necessary for lifting procedures carried out without lifting algorithms and using lifting algorithms was compared. Data obtained were repeatedly compared with number of staff provides by standard algorithms.

Analysis of algorithm *Transfer from sitting position to sitting position showed* that 2 persons are required to carry out this procedure. Standard provide 1-2 persons for this procedure.

Transfer from recumbency to recumbency requires the same number of stuff (mode 3:3). When additional aids are used standard recommends lower number of staff (1-2), and when elevator is used 2 persons are needed to carry out this procedure.

Changing body position from lateral (supine) position to lateral position requires the same number of stuff (mode 2:2). Algorithm provides 2 persons co carry out this procedure, and 1 person is necessary when lifting aids are used.

Observation showed that *Change of body* position in bed: moving upwards requires the same number of stuff both using and not using algorithm.

Observation showed that *Change of body position in chair and/or wheelchair* requires the same number of persons carrying out lifting procedure both using and not using algorithm (mode 2:2).

Patient lifting from the floor required 2 persons to carry out the procedure when algorithm was not used and 3 persons when algorithm was applied (preventing health of staff); 1-2 persons were needed to carry out this procedure when elevator was used.

One person was required for *Walking* position; standard also provides 1 person. When high risk of downfall exists I order to prevent patient's health algorithm provides 2 persons and lifting aids.

Transfer from recumbency to sitting position requires the same number of staff (mode 1:1).

It is arguable that changing patient's position in bed upwards, changing patient's position in the chair/wheelchair, walking and transferring patient from recumbency to sitting position the same number of staff is needed; transferring patient from sitting position to sitting position, from recumbency to recumbency, changing body position from lateral (supine) position to lateral position and lifting from floor using lifting aids lower number of staff is required.

Analysis of data obtained by observation showed that majority of staff feels excellent when lifting patients, and patients feel safe. One third of staff feel unsecured when use simple aids (slippery bedsheets, transfer plates etc.). This observation could be related with observations that staffs do not use lifting aids. Patients and staff experienced worst feelings when patients had to be lifted using elevator or other equipment.

Conclusions. Research showed that safe lofting algorithms are successfully implemented into practice.

1. Duration of procedures carried out without algorithms is insignificantly shorter than duration of lifting procedures carried out according algorithms. This small gap is caused by the fact that one third of respondents do not use lifting aids because these means are unordinary to them; rarely used equipment (elevators) require time to prepare for lifting, and staffs loose their skills. Time would be saved when lifting aids and equipment would be used in all cases when patient situation requires their use.
2. Number of stuff provided by algorithms is not higher than required to carry out lifting procedures without algorithm. Some algorithms provide lower number of staffs when patient's situation is easier and lifting aids are used.
3. Patient and staff feel safe using common lifting aids. According to staff it is convenient, easy, saves time and ensures safety of patient and staff. "Difficulties" mentioned during research are related to insufficient number of aids in some healthcare institutions, some acquires aids are poorly adapted to environment, and lack of lifting skills.

BIOBANKING IN LITHUANIA: PAST, PRESENT, FUTURE

Gudleviciene Zivile

Biobank of National Cancer Institute, Vilnius, Lithuania

The great medical progress has been influenced by the development of genomics, proteomics and other various "-omics" technological platforms and gain in bioinformatics, molecular-imaging, molecular diagnostics and drug development. Therefore, different biobanks, as the organised collections consisting of biological samples and associated clinical data, are increasingly established as a crucial base for medical research and further development of personalized medicine.

Currently in Lithuania only disease-based biorepositories or project-based biobanks exist in the few research institutions, university hospitals and clinics with insufficient number of samples stored. As examples: cancer tissue biobank in the National Cancer Institute (NCI), hematological patients tissues bank in Vilnius University Hospital Santariskiu Clinic's, great pathological material archive in National Centre of Pathology and dry blood samples archive in the Centre for Medical Genetics.

It is known that the main advantage of biobanks – the quick and efficient access to collected human biological material and associated clinical data. These possibilities increases competitiveness in medical research and reduce the time and attempt for achieving of scientific results that promotes scientific progress.

The majority of biobanking problems in Lithuania are influenced by the lack of biobanking activities and legislation in the National Law of Bioethics created in 2000 year with some corrections in 2008. There are no exact rules or legislation for the biobanking, integration and networking among these disease or project-based biobanks, there are no common SOPs for specimens operation and quality management, and integrated virtual data base system is missing.

On the other hand, in the past decades there is an increasing interest for international collaboration of various biobanks in different fields named as harmonization of biobanks. The main challenges in this field of biobanking are related with bioethical problems, personal data protection and the collection, processing, storage and sharing of biological samples. The harmonization includes sample processing, data management and governance interlinking the ethical and legal aspects.

In the future, involvement of stakeholders from governmental and non-governmental institutions, business partners, pharmaceutical and biotechnological enterprises which are potential data consumers in developing new drugs and diagnostics measures, are obligatory for the sustainability of biobanking activities.

In conclusion, first steps for biobanking activities, SOPs creation and process harmonization were made in NCI: based on the project-based cancer tissue biorepository Biobank in the NCI was established in 2012.

PECULIARITIES OF CARE FOR PATIENTS WITH NEUROTOXICITY DURING CHEMOTHERAPY

Anzela Jeluskina

Riga East University Hospital/Latvian Oncology Centre, Latvia

1. Chemotherapy is one of the treatment methods in oncology, which currently plays a major role in the systemic therapy of malignant tumors, and neurotoxicity is one of the specific systemic complications during the chemotherapy. Chemical preparations can cause both acute and chronic toxicity to virtually any organ system.
2. Neurotoxicity is based on the hyper excitability of peripheral nerve. These complications have been observed in 10-20% of patients who receive chemotherapy course.
3. Neurotoxicity can be evaluated in four stages based on its severity – from mild which does not affect the patient's quality of life and overall activity and where medical intervention is not necessary, to extremely severe, which is life threatening and requires immediate cancellation of chemotherapy and intensive treatment.
4. The most common expression of neurotoxicity is peripheral sensory neuropathy. Its initial symptoms are paresthesia in fingertips, hands, feet, and decrease of deep tendon reflexes. If chemotherapy is continued, paresthesia is progressing proximally, burning pain and loss of vibration sense starts to appear. Rare expressions of neurotoxicity may be motor neuropathy, and damage of central or autonomic nervous system.
5. Therapy is symptomatic, the specimens used most often are tricyclic antidepressants, anticonvulsants and an aesthetic medications, such as no steroidal anti-inflammatory drugs, B group vitamins.
6. Nurses play an important role in the early detection of and intervention for neurotoxicity, the success of treatment, and the patient's quality of life both during and after treatment. Survival is more common than ever; 60% of people diagnosed with cancer will survive their disease for at least five years. Therefore, nurses also need to consider how the sequelae of treatment may affect the survivor's quality of life.

Literature:

1. Hegmane A. Pacienta aprūpe ķīmijterapijas laikā un īsi pēc tās. Doctus, Janvāris 2006.
2. Шахнович Е.Б. Нейротоксичность при противоопухолевой химиотерапии.
3. Nielsen, Edith BSN, RN, CHPN; Brant, Jeannine MS, RN, AOC. Chemotherapy-Induced Neurotoxicity: Assessment and interventions for patients at risk. AJN, American Journal of Nursing: April 2002 – Vol.102 - Issue - pp 16-19.

THE STATE OF ONCOLOGICAL CARE IN KAZAKHSTAN

D. Kaidarova, ScD, Prof.

Correspondent Member of the National Academy of Sciences, Almaty Oncology Centre, Kazakhstan

During the last 10 years, the annual cancer incidence has increased by 5 % totaling to 28000 people. The mortality rate holds the second place after heart diseases with 17 000 deaths annually. However, due to introduction of 6 screening programs in Kazakhstan, the 5-year sur-vival rate has increased to 50,5 %. First place among men is occupied by lung cancer, and among women - breast cancer. In Kazakhstan the oncological care is free for cancer patients, according to the National cancer care development program for 2012-2016.

Key words: Kazakhstan, morbidity and mortality rate, the National oncology program.

WHAT IS YOUR EXCUSE NOT TO USE MINIMALLY INVASIVE APPROACH?

Algirdas Markauskas, MD[1], Vilius Rudaitis, MD[2]

1 Department of Gynaecology & Obstetrics, Odense University Hospital, Denmark
2 Department of Gynaecology & Obstetrics, Vilnius University Hospital Santariskiu Clinics, Lithuania

Objective. The aim of our presentation is to describe the possibilities and the limitations of minimally invasive and robotic technologies in gynae-oncological surgery.

Methods. Sharing experiences from everyday clinical practice from the Vilnius University Hospital Santariškių Klinikos in Lithuania and from the Odense University Hospital in Denmark.

Conclusions. Laparoscopic surgery has already proved its advantages over traditional open surgery in a large number of gynae-oncological procedures. Implementation of robotic surgery may increase the overall number of minimally invasive procedures in gynae-oncology with greater safety for the patients and superior ergonomics for the surgeons.

NANOMEDICINE-HOW FAR WE WILL GO?

Vitalijus Karabanovas

Biomedical Physics Laboratory, National Cancer Institute, Vilnius, Lithuania

Despite the progress in cancer treatment, many scientists and researchers recognize that currently applied standard therapy schemes are reaching their limits. Low efficiency of the treatment and tumor recurrence remains a sensitive issue predicting that cancer will be ranked first by the number of deaths in 2020. According to the experts poor cancer therapy indicators are caused by two main factors. First, cancer is diagnosed too late, when the disease is advanced and treatment methods are less effective. Second, the currently used drugs are often toxic to the patient, so their chances of survival and success of the treatment is significantly impeded due to systemic side effects of drugs. These problems can be solved with a help of nanotechnology-based early cancer diagnosis, its visualization and the targeted drug delivery to the lesion site. These two main research priorities are formulated in the European science strategy documents for nanomedicine.

The idea of selective nanomedicine and modern technologies enable scientists to make cardinal changes in diagnostics of oncological disease, evaluation of its origins, to develop new methods for selective treatment based on studies of passive or active modulation of intracellular processes as well as to create innovative systems for implementation of those tasks. This presentation will cover an overview of new nanomedical approaches for early cancer theranostics.

Strategy for using multifunctional nanoparticles in cancer therapy and diagnostics will be discussed.

CONCURRENT CHEMORADIATION THERAPY OF LUNG CANCER – TOXICITY AND EFFICACY PROFILE: A SINGLE-INSTITUTION EXPERIENC E OF 37 PATIENTS

Kozirovskis Viktors, Purkalne Gunta, Vija Bērziņa, Aija Geriņa-Bērziņa, Elīna Skuja, Linda Jurginauska, Arturs Sorubalko, Jeļena Nikolajeva, Jānis Kazaks, Lilija Ķēniņa

Paul Stradins Clinical University Hospital, Riga, Latvia

Background. Recent meta-analyses showed that concurrent chemoradiation improves survival of patients with locally advanced NSCLC/limited stage SCLC as compared with sequential approach. However, patient selection is an important consideration in view of the added toxicity of concurrent treatment. This study was conducted to analyze the tolerability of concomitant chemoradiation by lung cancer patients in Paul Stradins Clinical University Hospital. Efficacy analysis was the secondary objective.

Material and methods. *Patients.* 44 patients (27 limited stage SCLC, 17 locally advanced NSCLC patients) treated with concurrent chemoradiation and 25 patients (12 limited stage SCLC, 13 locally advanced NSCLC patients) treated with sequential chemotherapy/radiation therapy in 2011 – 2014 were analyzed retrospectively. Information was collected from medical records, clinic's data base, cancer registry and toxicity assessment form, filled by treating medical oncologist. In concurrent arm 6 SCLC patients were excluded from the analysis due to early (< 6 months) distant metastases and 1 NSCLC patient was excluded due to traumatic hip fracture during treatment course.

Treatment. Concurrent chemoradiation consisted of Cisplatin 50 mg/m2 on days 1, 8, 29, and 36; Etoposide 50 mg/m2 on days 1-5, 29-33. Dose reduction to 75% or 50% could be considered by treating medical oncologist. No prophylactic G-CSF were used. Radiation therapy (RT) started on day 1 and consisted of 25 fractions of 1.8 Gy, 5 fractions/week, with 3D-treatment planning. The planning CT scan was made 1 week before the start of the therapy. 24 patients have started RT with 1st chemotherapy (CT) cycle, 3 patients – with 2nd CT cycle, 6 patients – with 3rd CT cycle and 4 patients – with 4th CT cycle. All other chemotherapy cycles were Cisplatin 75 mg/m2 on day 1 and Etoposide 100 mg/m2 on days 1, 2 and 3 every 3 weeks. The whole treatment consisted of 4 to 6 chemotherapy cycles.

Statistics. The Chi-squared test was used to compare clinical characteristics of patients in study arms. Linear trends in toxicity scores (NCI CTC Toxicity scale Version 2.0) across maximum toxicity levels were investigated using one-way analysis of variance. The Kaplan-Meier method was applied to determine progression free survival and overall survival in concurrent and sequential arms, and the log-rank test was used to compare treatment results. P values and 95% confidence intervals were two-sided. A p value less than 0.05 was considered statistically significant. Tests were performed using the MedCalc, Version 10.2.0.0 software.

Results. Patient population. Both SCLC and NSCLC patients in concurrent and sequential arms did not differ significantly from each other with respect to the distribution of gender, age, chemotherapy or radiation therapy deviations, best response to therapy and disease progression type ($p>0.05$).

SCLC group. More patients with reduced performance status were in sequential arm ($p=0.007$). Chemotherapy doses received by limited stage SCLC patients were similar in concurrent and sequential groups ($p>0.05$).All patients have completed therapy in sequential arm. In concurrent arm 1 patient (4.7%) has not completed therapy due to adverse event (grade 4 radiation pneumonitis).

No statistically significant differences were observed in the rate of radiation esophagitis, radiation pneumonitis, radiation dermatitis, secondary leucopenia, neutropenia and thrombocytopenia between concurrent and sequential arms ($p>0.05$).

2 toxic deaths from grade 4 radiation pneumonitis were observed (one in the sequential arm after the end of therapy, another in the concurrent arm during treatment).

Only secondary anemia was more frequent and pronounced in concurrent treatment group ($p=0.0209$).

NSCLC group. Performance status of locally advanced NSCLC patients was equal in concurrent and sequential groups ($p>0.05$). More patients with chemotherapy dose reduction were in concurrent arm ($p=0.033$).

All patients have completed therapy in sequential arm. 2 patients (12.5%) in concurrent arm have not completed therapy due to adverse events (bronchoesophageal fistula, atrial fibrillation).

No statistically significant differences were observed in the rate of radiation esophagitis, radiation dermatitis and secondary thrombocytopenia between arms ($p>0.05$).

Radiation pneumonitis was more frequent in the sequential therapy arm ($p=0.0033$).

Secondary leucopenia, neutropenia and anemia were more frequent and pronounced in concurrent treatment group (p = 0.0018, p = 0.0306 and p = 0.0263, respectively).

Progression free survival (PFS) and overall survival (OS) in concurrent and sequential arms did not differ statistically significantly from one another in both SCLC and NSCLC patients. Treatment results are shown in Table 1.

Table 1.

TREATMENT MODALITY	PATIENTS	RESPONSE					SURVIVAL			
		CR	PR	SD	PD	NK	median PFS (months)	median OS (months)	1 yr survival	2 yr survival
SCLC										
Concurrent	21	4	16	0	0	1	11	22.7	78%	45%
Sequential	12	1	11	0	0	0	10	15.3	58%	25%
							P = 0.8042; 95% CI, 0.38-2.12	P = 0.4668; 95% CI, 0.28-1.79		
NSCLC										
Concurrent	16	1	10	1	2	2	6.9	20.6	52%	26%
Sequential	13	0	9	3	1	0	10.6	13.5	62%	46%
							P = 0.8682; 95% CI, 0.45-2.56	P = 0.6286; 95% CI, 0.45-3.80		

Conclusions. Concurrent chemoradiation was more toxic then sequential approach in terms of hematologic toxicity, but not in terms of skin, upper gastrointestinal and pulmonary toxicity.

Patient selection is crucial to reduce the number of patients, who fail to complete concomitant chemoradiation therapy due to adverse events.

Survival of locally advanced NSCLC/limited stage SCLC patients treated by concurrent chemoradiation or sequential chemotherapy/radiation therapy did not differ statistically significantly from each other in this particular study, probably due to small patient number.

Magdalena Bielska-Lasota

National Institute of Public Health, National Institute of Hygiene, Warszawa, Polandy Hospital Santariskiu Clinics, Lithuania

Cancer survival rates are a key measure of the effectiveness of health care system in population.

Over the past 20 years results of EUROCARE studies, based on Cancer Registries data in European countries were provided systematically. EUROCARE findings which are robustly comparable due to application of standardized methodology and quality-controlled.

EUROCARE findings showed large and sometimes unexpected differences in survival between European populations. Such persisting differences indicate inequalities in the provision of care and availability of adequate treatments.

Main findings of EUROCARE 5, published in 2014, continue to demonstrate steady improvement of mean age-standardized 5-year relative survival rates by nearly 3.5% compared to late 90s. This trend was evident in Eastern European countries, but despite that, survival remain lower (man 50.4 and woman 59.3) compared to European average (57.7 and 61.1) and Northern Europe (39.3 and 53.7) where rates were usually highest.

Survival were lower in man than woman and this trend was more evident in Eastern European countries. That might be connected with different proportion of lung cancer which is still high in Eastern Europe and prostate cancer which in contrary is dominated in Northern countries.

For most cancer sites difference between sexes are less evident.

Over 40% of the study population of more that 9 000 thousand patients is composed from three cancer sites with relatively good prognosis. An improvement of survival for these cancers were: 4.2% for breast, 10.1% for prostate and 1.8 % for colorectal. For all these three cancers survival were lowest in Eastern European countries and highest in Northern and Central Europe.

Survival in Eastern Europe for breast cancer was 75.7, for prostate 72.8 and colorectal 47.0. These were below European mean which amounted respectively: 83.7 for breast, 84.0 - prostate and 55.1 - colorectal cancers.

Assuming, that in the countries bordering the Baltic Sea cancer survival rates reached the level of Scandinavian countries more than 6 thousand cancer patients diagnosed each year could have survived only in Baltic countries and in Poland.

EPISODES OF GI CANCERS IN YAZD PROVINCE 2005-2010: A DATA LINKAGE STUDY

Masoud Mirzaei[1], Azimeh Roohi[2]

1 Associate Professor, Yazd Cardiovascular Research Centre, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
2 MSc of ICT, Research Assistant, Shahid Sadoughi Hospital, Yazd, Iran

Background. Incidence and mortality of gastrointestinal (GI) cancers have been rising in Yazd province over the last decade. Data linkage, which means linking various health and medical data from different sources, brings a new opportunity to investigate natural history of cancers. This study aims to investigate hospital admission episodes of patients who died from GI cancers over the period of 2005-2010 in Yazd province.

Method. Yazd province is located in central Iran with around one million population. Mortality data of GI cancers was obtained from National Cancer Registry (NCR) database. Using national identity number, name and address, admission data of Hospital Information System (HIS) of the main teaching hospital of the province, Shahid Sadoughi Hospital (SSH), were linked to the NCR database. SSH is the main public hospital in the province, which provides service to over 90% of GI cancer patients. Ethics approval was obtained from SSU ethics committee and all data de-identified after linkage and before any analysis.

Results. Out of 974 GI cancers' mortality record from NCR over the period of 2005-2010, 617 records were linkable to the HIS database of Shahid Sadoughi Hospital corresponding to 218 patients, 2/3 of them were males. Number of cases increased 2.7 folds in males and 3.1 folds in females over the period. However, mortality declined by 50% in males and 20% in females.

Average length of stay (LOS) is similar for gastric, colon and pancreatic cancers over the period. Overall, length of stay of GI patients, who died of cancer, was not changed over the period.

Conclusions. Incidence of GI cancers has raised in Yazd over the period, probably due to better diagnosis, and mortality slightly declined. Incidence and mortality of GI cancers are remarkably higher in males compare to females. Interestingly, LOS of colon cancer is similar to pancreatic cancer which suggests late diagnosis of colon cancer in spite of better prognosis and availability of early diagnosis methods for it. Average LOS of GI cancer patients did not change over the period, although new screening facilities become gradually available.

COLORECTAL CANCER SURGERY COMPLICATION RISKS

Dr. Airi Oeselg

East-Tallinn Central Hospital, Tallinn, Estonia

Background. Every year ~ 800 new colorectal cancer cases are diagnosed in Estonia. More than 700 colorectal cancer patients die yearly in Estonia. To reduce the mortality we need to diagnose the disease at early stage and to have an adequate multidisciplinary treatment. Perioperative risk for complications depends on the patient (age, weight), on the disease (emergency, localization) and on the surgical technique (operation time, surgical qualification).

Methodology. Total number of 296 patients diagnosed with colorectal cancer, who were operated between September 2008 and November 2012 in East-Tallinn Central hospital Surgery department, was analyzed to find out the perioperative risk factors. Fisher`s exact test was used to test statistical significance.

Results. Our data concluded that 78% of the patients had colon cancer and 21% rectal cancer. Evaluation of emergency patients showed that most of the patients had bowel obstruction because of the tumor (70%), 11, 4% had significant bowel bleeding and 18, 4% had perforated colon cancer. Surprisingly there were no statistical significance between perioperative complications in elective and emergency cases, with percentages 20, 2% in elective surgery and 15% in emergency surgery. The perioperative complication rate was 17, 2%. The most often occurred anastomotic leakage (4, 3%) and wound infection (4, 3%). Less common were postoperative pneumonia, dynamic ileus and wound dehiscence. Relaparotomies were performed in 6% of the cases mostly because of the anastomotic leakages. Perioperative 30 day mortality was 2, 4%.The most important patient related risk factor is age, which significantly raises the mortality, as in our patients all lethal cases were over 70 years old and 6 cases out of 7 were emergency situations. Looking at surgical qualification influence to complications we found that the surgeons with experience under 5 years had the perioperative complications 14% and over 5 years experience had 19% of complications. This is also not statistically significant difference. The operation time did not play any role in complications risk. But logically the complications did prolong the hospital stay.

Conclusions. Our study showed that only statistically significant risk factor in perioperative period was the patient's age over 70 years. Although other patient`s related, tumor related and surgery related factors did not show any statistically important difference, we found that there is some increase in perioperative complications in emergency operations .Contrary to the literature, surgeons experience did not increase the complications rate, but decreased it, which can be explained by the selection of the patients that are allowed to the young surgeons to operate on.

Keywords. Colorectal cancer, cancer surgery, perioperative complications, surgery risks, emergency surgery, surgery for elderly patients

THE BEST SUPPORTIVE CARE: CHALENGES, PROBLEMS AND EXPERIENCE IN ST. CHIRSTOPHERIS HOSPICE IN WARSAW

Pietruk Karolina, PhD

The Clinical Nursing Department, the Health Science Faculty, the Medical University of Warsaw, Poland
The Hospice Cancer Foundation in Warsaw, Poland

Introduction. Every year in Poland and in the whole world there rises the demand for palliative care. In the light of the above, it becomes necessary to ensure that the fatally ill patients are provided with good quality care that is in accordance with the standards of World Health Organization. In order to evaluate such care one must take into account the human resources base, the material base and the technical infrastructure. Places and conditions in which patients stay define the area where the most important element is the patient himself or herself and his or her family. In a hospice patients' condition often deteriorates very quickly.

Aims of study. Highlighting the problems and challenges of palliative care in Poland, based on the experience of one of the Polish hospices.

Stressing the importance of proper communication while taking care of the patient in palliative care and presenting exemplary mistakes made.

The development. The development of palliative care is considered to be one of the goals of the health policy in Poland. Problems of palliative care in the country are set out in the reports of consultants. The objective of this presentation was to framework for the contemporary palliative care, its organization and functioning and to indicate main difficulties connected with. During a presentation behaviors of caregivers will be presented that can be encountered on a daily basis along with mistakes that could be avoided in verbal and non-verbal communication while caring of patients. Examples will be provided showing how patients receive the staff's messages that were unaware or were meant differently. In educating the staff, the process of developing proper attitudes should be strongly emphasized among students studying nursing. Therefore, during the presentation of the paper, exemplary exercises will be shown which are used in the course of practical classes in palliative care to demonstrate to students how patients may receive the staff's messages and which behaviors should be avoided.

ANALYSIS OF POSTOPERATIVE PERIOD TERM CARE PROBLEMS OF PATIENTS WITH LARYNGEAL CANCER

Oksana Seletiene

National Cancer Institute, Vilnius, Lithuania

Objective. Many patients, diagnosed with cancer, need help, in this disease stages, when everything seems to have no sense. Then it would be wise, at first, to have short time goals, not forgetting long time goals. A sign of good nursing is to give and fulfill hope for every single patient. However we have to have in mind a lot of various details, if we want to have a good and purposeful patient nursing.

Aim. The goal of this work was to analyze problems, which have patients with diagnosed larynx cancer, in post operative period. The tasks of this research are: establish patient's psychological problems after undergoing larynx removal, estimate difficulties that appear in looking after tracheostoma, analyze problems that can occur, when patient is being fed thru the feeding tube.

Methods. Quantitative research method was used in this research. Patients where being questioned after larynx removal surgery.

Results. Conclusions. The results show, that cancer became more frequent among women. Most of the patients suffered from stress, fear, they went thru life quality changes after diagnosing cancer. Some of them even were in need of psychological help. Tracheostoma formed after the operation caused aesthetic discomfort, communication problems, decreased physical activity. Most of the patients had unpleasant feelings: disphagia, diarrhea, discomfort.

TRACHEOBRONCHIAL SLEEVE RESECTIONS IN THE PRACTICE OF NORTH ESTONIA MEDICAL CENTER

Tõnu Vanakesa

North Estonia Medical Center, Center of Cardiothoracic Surgery, Tallinn, Estonia

Tracheobronchial sleeve resections, with or without resection of lung parenchyma, have aquired paramount importance in the daily practice of Thoracic Surgery, allowing conservation of lung parenchyma for patients with benign and malignant tumors and make feasible extended resections for locally advanced malignant tumors. In this study we retrospectively reviewed our experience with sleeve resections and report the results associated with indications and type of resections, postoperative complications and present the patients survival follow-up data.

Since the foundation of North Estonia Medical Center in 2002 up to 2014 we have performed 128 intrathoracic tracheobronchial sleeve resections. The median age of the patient was 60.8 years with a range of 23 to 84 years. There were 107 male and 21 female patients. Sleeve resection was undertaken for lung cancer in 112 patients, carcinoid tumor in 7 patients, tracheal cancer in 2 patients, metastatic disease in 4 patients, aquired stricture in 2 patients and benign tumor in 1 patient. Four patients had tracheal resection, 15 patients had sleeve pneumonectomy and 109 patients had sleeve lobectomy. In the group of 109 patients in whom sleeve lobectomy was performed, 27 patients (24.8 %) had a preoperative contraindication to pneumonectomy. Right upper lobectomy was the most common operation in 47 patients (43.1%). Extended sleeve lobectomy, resection of more than one lobe, was performed in 23 cases (21.1%). Arterioplasty was performed in 5 patients (4.6%). Resection was incomplete in 1 patient (0.9%), who had palliative sleeve lobectomy due to M1 disease. The morbidity of sleeve resections was 23.4% and overall operative mortality 3.1%. A total of 7 patients (5.5%) had anastomotic complications: anastomotic dehisence developed in 4 patients (3.1%), anastomotic stricture in 2 patients (1.6%) and early air leak from suture line in 1 patient (0.8%). Follow-up (FU) was from 8 months to 14.7 years (median 5.3 years). In the group of patients undergoing sleeve pneumonectomy, 8 of 15 patients (53.3%) are disease free with median FU time 6.4 years. From 96 patients who underwent radical sleeve lobectomy for lung cancer 43 (44.3%) are disease free (median FU 5.2 years) including 20 of 42 patients (66.0%) with N0 disease (median FU 5.1 years), 17 of 34 patients (50.0%) with N1 disease (median FU 4.7 years) and 6 of 20 patients (30.0%) with N2 disease (median FU 6.3 years).

Although tracheobronchial sleeve resections have remained a surgical challenge with specific problems of intraoperative surgical management, our experience suggest that the results of sleeve resections are associated with acceptable mortality and bronchial anastomotic complication rates. Sleeve lobectomy is valuable choice to avoid pneumonectomy in any patient in whom the anatomy is suitable, regardless of whether they would tolerate a larger resection. Irrespective of a type of resection and pulmonary reserve the tracheobronchial sleeve resections provide tumor local control and could offer good long-term survival for patients with intrathoracic malignancies.

THE ROLE OF SENTINEL LYMPH NODE BIOPSY IN DIAGNOSIS AND TREATMENT OF EARLY STAGE SQUAMOUS CELL VULVAR CARCINOMA

Kastytis Zilinskas[1], Sigitas Tiskevicius[1], Birute Intaite[1], Kristina Maculevic[2], Valerij Ostapenko[1]

1 National Cancer Institute1, Vilnius, Lithuania
2 Vilnius university, Faculty of Medicine, Vilnius, Lithuania

Key Words: Vulvar cancer; sentinel lymph node; technetium (99mTc) albumin nanocolloid; vital blue dye

Background and Objective. Radical vulvectomy accompanied by bilateral inguinal lymphadenectomy (ILAE) has been performed for a long time, but due to number of short and long term postoperative complications, alternatives has been searched. The objective was to evaluate the role of sentinel lymph node (SLN) biopsy in diagnosis and treatment of vulvar carcinoma and to determine reliability and safety of modern methods of SLN localization.

Material and methods. This retrospective study involved 14 patients with I - II (FIGO) stage vulvar carcinoma, who underwent treatment from May, 2012 to December, 2013 in the National Cancer Institute. The diagnosis of vulvar carcinoma was confirmed histologically in all patients. Metastases in regional lymph nodes were not detected during preoperative testing. SLN biopsy was performed using double-mapping method: preoperative lymphoscintigraphy (LSG) and vital blue dye.

Results. Intraoperatively SLN were found and removed in all 14 patients. In 13 (92.8%) cases SLN were both radioactive (“hot”) and blue stained, in one case SLN was only blue stained. Metastases in lymph nodes were detected in final histological examination in 4 (28.6 %) patients. 4 (28.6 %) patients out of 14 underwent bilateral ILAE and 9 (64,3 %) patients underwent only SLN dissection, 1 (7,1 %) patient, with lateral vulvar cancer localisation, underwent unilateral ILAE.

Conclusions. SLN biopsy is a reliable method using double-mapping method in patients with vulvar carcinoma. This method is safe for both a patient and medical staff. SLN localization is purposeful for patients with early stages of vulvar carcinoma in order to reduce the extent of surgical interventions.

FEATURES OF ONCOLOGY CARE FOR PATIENTS AFTER CHEMOTHERAPY IN DAY UNIT

Danguole Zadoreckiene

National Cancer Institute, Vilnius, Lithuania

Diagnosis - cancer. Treatment – chemotherapy. The patient treated in a day department learns how to take care of himself and lives the life as usual. The research determine important problem of patients who's sickness is the malignant tumour and its side affects, their assessment and control of the management. Also there is the problem of intercourse between the nurse and a patient.

Oncologic illnesses are the most important our health problem in all the world community. Recently this illness frightens people most of all, even then there is a fact that about 50% of all who got ill can be treated. Increasing the oncological illnesses number also increase patients who are treated by chemotherapy.

The basic complaint and symptom of illness becomes the side effects and communication of the patient.

The aim of research:
To evaluate the day department peculiarities in the nursing after the chemotherapy.

Problems:
- To evaluate the patient's and nurses communication specific in a day department.
- To lift the patients knowledge about chemotherapy and its side effects.
- To investigate the patient's opinion about a facility of the day department.

The object of research:
Peculiarities of the patients who is treated in a day department after chemotherapy.

The methods of the research:
- The research made using quantitative method. The explored respondents where ill with malignant tumours, and treated in VUOI day department.
- The respondents had been taken using purposefully undenominational selection. There was used the questionnaire and analysis of the scientific literature for the research.

Results:
- The nursing staff of the patient who are ill with the oncological illnesses conforms nursing needs evaluating and trying to require it. The patients have some kind of needs, which the nurse knows and tries to satisfy.
- It maintain that oncological patients nursing needs depends of the treatment ant its side effect. Its important to introduce patients with chemotherapy and its side effects for a research of the positive their psychological bias, preparation for a negative changes, approval opinion for a treating activities and participation of self-care.
- The clear information helps for a patient to make a decision and decrease a worry.
- We found that frequently nurse is a person who gives the information for patients in a chemotherapy course.
- Nursing problems dictates a patient's health care needs.

PHOTODYNAMIC THERAPY OF CANCER: TOWARDS NANOTECHNOLOGY

R. Rotomskis

Laboratory of Biomedical Physiscs, National Cancer Institute and Laser Research Center, Vilnius University, Vilnius, Lithuania.

Photodynamic therapy of cancer (PDT) has been developed in past decades as an alternative method to the traditional treatment of cancer. This method is based on the photochemical reactions between light and tumour tissue with exogenous photosensitizing agents. The classic PDT treatment of various malignant tumours utilizes the administration of photosensitizer drug to the patient. The drug then selectively accumulates in the tumour area and next is illuminated with light which activates the photosensitizer. Most known photosensitizers used in PDT represent type II photochemical reaction when energy transfer to molecular oxygen occurs to yield very reactive singulet oxygen. Singulet oxygen induces cytotoxic reactions, which cause tumour necrosis.

Although this modality has significantly improved the quality of life and survival time for many patients it still offers significant potential for further improvement. In addition to the development of the new PDT drugs, the use of nanosized carriers for photosensitizers is a promising approach which might improve the efficacy of photodynamic activity and which can overcome many side effects associate with classic photodynamic therapy.

Nanomaterials have unique physicochemical properties, such as small size, large surface area to mass and high reactivity which are used to overcome limitations found in traditional therapeutic agents. Due to nano-dimensions and unique optical properties, high stability and easy surface modification by binding different functional groups and biomolecules, nanoparticles are considered as promising materials for biological and medical applications. They show a high ability to specifically recognize and bind to target cancer areas via surface attached specific ligand, for example monoclonial antibodies, foliate, transferin etc. Recently it was suggested to use nanoparticles not only as diagnostic agents but also as excitation energy donors for photosensitizers applied in (PDT).

This presentation aims at highlighting the different types of nanotechnological approaches applicable in PDT and outlines future trends and limitations of nanodelivery of photosensitizers. The main attention will be paid to the perspectives of application of the semiconductor quantum dots (QD) in the photodynamic therapy of cancer.

QD are semiconductor nanoparticles, which have several characteristic that make them a potentially new class of agents for diagnostics and therapeutics. There are three general photophysical requirements of a QD and a photosensitizer complex to be used as the advanced agent in PDT: dark stability, effective FRET from QD to photosensitizer molecules and effective generation of reactive oxygen species.

Spectroscopic investigations of complex formation and resonance excitation energy transfer between CdSe/ZnS quantum dots and classical sensitizers are discussed. The experimental results about the formation of non-covalent complex between CdSe/ZnS quantum dots and conventional photosensitizers as well as about the excitation energy transfer from QD to a sensitizer and generation of singlet oxygen in model environment will be presented.

A whole range of aspects concerning the application of the advanced nano-agent for the photodynamic therapy – the complex between quantum dots and porphyrin-type photosensitizers is discussed together with the light-mediated cytotoxicity of QD.



ABSTRACTS

MICRORNAS EXPRESSION IN COLORECTAL CANCER

Edita Baltruskeviciene[1], Diana Schveigert[1], Agnieska Brazovskaja[1], Ugnius Mickys[2], Kestutis Suziedelis[1], Eduardas Aleknavicius[1]

1 National Cancer Institute, Vilnius, Lithuania
2 National Centre of Pathology, Affiliate of Vilnius University Hospital Santariškių Clinics, Vilnius, Lithuania

Introduction. Colorectal cancer is one of the leading causes of death in the world and early detection of colorectal cancer is necessary for the successful treatment. Environmental factors and genetic mutations are involved in the initiation and progression of this disease. MicroRNAs are new molecular markers that could be used both in diagnostic and in prognostic ways. MicroRNAs are small (19-24 nucleotides), endogenous, non-coding RNA molecules, which are known to regulate gene expression. Changes in microRNAs expression are identified in colorectal tumors.

The aim of this study was to determine microRNA expression (miR-148a and miR-625-3p) in colorectal tumors and its correlation with colorectal cancer progression.

Materials and methods. A total of 60 colorectal cancer patients were enrolled to the study. MicroRNA was extracted from formalin-fixed, paraffin-embedded (FFPE) tissue sections using "miRNeasy FFPE Kit" (Qiagen, Germany). Analysis of miR-148a and miR-625-3p expression was done by qRT-PCR with TaqMan specific primers (Applied Biosystems, USA). MicroRNAs expression was determined relatively to the expression of RNU6 and was analyzed by ΔΔCt method. Patients were separated into those with low or high microRNA expression. A $\chi 2$ test and correlation analysis was used to analyze microRNAs expression in relation to clinicopathological parameters. The results were considered as statistically significant when $p<0,05$.

Results. Both microRNAs expression (miR-148a and miR-625-3p) were detected in FFPE-derived tissue sections. Low microRNAs expression was identified more often: 78,3% for miR-148a and 76,7% for miR-625-3p. miR-148a expression correlated only with patients' age ($p=0,03$). Further, low miR-148a and miR-625-3p expression was associated with disease progression. There were no statistical correlations between microRNAs expression and other clinicopathological parameters of the patients.

Conclusions. Specific biomarkers of colorectal cancer should be identified to evaluate response to treatment in patients with colorectal cancer. This study shows that low miR-148a and miR-625-3p expression is associated with disease progression. Colorectal cancer patients with disease progression more frequently had low miR-148a and miR-625-3p expression in tumors. Also, more attention should be paid to younger patients and disease progression, because low miR-148a correlated with younger patients' age.

DIFFERENCES OF REDUCED GLUTATHIONE AND GLUTATHIONE S-TRANSFERASE LEVELS IN PATIENTS WITH LIVER METASTASES OF COLORECTAL CANCER AND OTHER HEPATIC DISORDERS

Edita Baltruskeviciene[1], Birute Kazbariene[1], Aurelija Krikštaponiene[1], Robertas Badaras[2], Linas Zdanavicius[2], Loreta Bagdonaite[2]

1 National Cancer Institute, Vilnius, Lithuania
2 Faculty of Medicine of Vilnius University, Lithuania

Background and objective. To determine the changes of reduced glutathione (GSH) and glutathione S-transferase (GST) in cases of hepatic steatosis, cirrhosis and liver metastases of colorectal cancer.

Material and methods. 102 patients were enrolled in this study, among them 27 – with hepatic steatosis, 29 – with cirrhosis, 46 – with liver metastases of colorectal cancer; control group consisted of 40 volunteers. The levels of GSH and GST were evaluated by enzyme-linked immunosorbent assay ELISA according to the manufacturer's guidelines.

Non-parametric analysis was used, because the sample was not normally distributed. Pair-wise comparisons were conducted using Wilcoxon signed rank test. Mann-Whitney test was used to compare outcomes between groups. Statistical analysis was performed using Statistical Package for the Social Sciences program (SPSS, 16.0). Frequencies and percentages were used for the categorical measures. The result was considered significant if $p\text{-value} < 0.05$.

Results. Significant differences according patients gender and age were observed in the groups, but neither age nor gender influenced changes in GSH and GST level. The analysis of changes in the level of these enzymes accordingly to the liver disease revealed statistically significant differences. GSH and GST level were significantly elevated in patients with cirrhosis compared to control group (GSH – 62.04 μg/ml vs 52.72 μg/ml, $p=0.034$; and GST – 0.94 ng/ml vs 0.53 ng/ml., $p=0.001$). GSH concentration was reduced in cases of hepatic steatosis (17.04 μg/ml) and liver metastases 38.79 μg/ml), GST concentration was elevated in both cases (5.89 ng/ml and 1.17 ng/ml respectively). The highest GSH concentration was observed in cirrhotic patients and the lowest – in steatotic, opposite results were observed for GST levels – highest in steatotic and lowest in cirrhotic patients.

Conclusion. Low levels of GSH and high of GST in cases of hepatic steatosis and liver metastases of colorectal cancer suggests that antioxidative system is not capable enough to counteract oxidative stress which is higher in patients with above mentioned pathology and lower in patients with hepatic cirrhosis.

VARIOUS METHODS OF PHOTODYNAMIC THERAPY FOR THE TREATMENT IN MALIGNANCIES OF DIFFERENT MORPHOLOGY

Laima Bloznelyte-Plesniene, Laimute Rutkovskiene

National Cancer Institute, Vilnius, Lithuania

Introduction. Photodynamic therapy (PDT) produces a complete response in high percentage of patients. Almost all histological types of tumor are sensitive to PDT, so this has encourage to investigate the method on a more broader scale. The goal of this work was and to enlarge the possibilities of PDT in clinical radical and palliative treatment of cancer patients. To achieve this, we suggest new effective PDT methods according to tumor morphology, size and localization.

Materials and method. Since 1989 the total of 2340 patients with both 3742 malignant and 914 precancerous tumors underwent PDT in VUOI. Six different lasers and four light diodes system were applied by us for PDT. Hematoporphyrin derivatives (HpD) were used for intravenous (1640 tumors were treated) and intraarterial PDT (60 oral malignancies were treated) and 5-aminolevulinic acid - for topical (2042 tumors) or per oral PDT(16 tumors). HpD were applied via i/v or i/a injection with a subsequent irradiation after 4-72 hours with red light (χ=630+/-3 nm) at the dose of 200-300 J/cm2. Applying PDT, the light power density varied from 25-50 mW/cm2 for melanoma to 300 mW/cm2 for BCC. Usually, we used 200 mW/cm2 light power density.

Results. After a single ALA-PDT treatment, 1198 (97% BCC, 449 (76%) squamous cell carcinomas and 110 other tumors (84%) showed a complete response, for the remaining 285 lesions, a partial response was observed. In most of these cases the PDT was repeated. The result of PDT depended on the thickness, and on morphology of treated tumor. If the thickness of tumor was less than 3 mm, the single PDT course was sufficient for the complete tumor's regression. The exception was melanoma. It required the special PDT method - long-term multistaged low power photosensitized melanoma laser lighting, gradually increasing the power of the light. Such treatment significantly prolongs the median survival of patients with recurrent and metastatic melanoma. The median survival of 78 patients with recurrent skin mucous and soft tissues melanoma (for whom PDT was applied) from the moment of finding of recurrence was 27 months.

Conclusions. Photodynamic therapy is effective in primary and recurrent lesion as well as in the ones for which radiotherapy or chemotherapy was provided. Topical ALA-PDT is simpler for patient. Multistaged low power radiation of photosensitized melanoma gradually increasing light power, makes full melanoma necrosis possible, and significantly improves distant treatment results.

THROMBOTIC RISK FACTORS FOR ESSENTIAL THROMBOCYTHEMIA PATIENTS

Ruta Dambrauskiene[1], Rolandas Gerbutavicius[1], Elona Juozaityte[1], Rasa Ugenskiene[1], Vilma Petrylaite[2]

1 Oncology Institute of Hospital of Lithuanian University of Health Sciences Kaunas Clinics, Lithuania
2 Lithuanian University of Health Sciences, Lithuania

Introduction. Essential thrombocythemia is one of the myeloprolifertive neoplasms. Disease diagnosis is made based on thrombocytosis more than 450 x 109/l, bone marrow biopsy and clonal marker: JAK-2 V617F, MPL or other. The most common disease complications are thrombosis, bleeding, progression to acute leukemija or myelofibrosis.

Objective: To describe and analyse thrombotic complications, their rate and risk factors in essential thrombocythemia (ET) patients treated in Hospital of Lithuanian University of Health Sciences Kaunas Clinics (HLUHS Kaunas Clinics).

Materials and methods. The study involved 302 patients from HLUHS Kaunas Clinics with essential thrombocythemia diagnosis from 2000 to 2013. All patients clinical and laboratory data, signs of vascular complications were reviewed retrospectively and prospectively from the time of diagnosis.

Results. Our cohort consisted of 302 patients with ET from HLUHS Kaunas Klinikos. Patients were diagnosed according to the updated 2008 WHO ET criteria and 83 patients were reclassified from the Polycythaemia Vera Study Group (PVSG) criteria. The median age of patients was 65 years (17 - 95), male /female 2:1, median disease duration was 56.8 months (2-166 months), median time to thrombosis episode was 29 months (1-108), mean WBC counts was 10.12 x109/l (4-45 x109/l), mean platelet count - 873 x109/l (450 - 2486 x109/l), splenomegaly had 25 (11,2%) patients, JAK-2 V617F was performed in 178 patients, 146 (82 %) were positive. From 302 ET patients 65 had thrombotic complications prior to or at the time of diagnosis. After logistic regression analysis variables related to the risk of thrombosis were established: age over 60 (p=0.0001) and thrombosis in the past (p=0.0001). 110 (36.5 %) patients were younger than 60 years of age, 15 (13.6 %) of them had vascular events. Older than 60 years of age were 192 (63.5 %) patients, 50 (26%) of them had vascular events. According to old known risk factors, 95 patients belong to low risk group, 207- high risk group. According to IPSET low risk group consist of 75 patients, intermediate - 123, high - 104 patients.

Conclusions. In our cohort of heterogeneously diagnosed ET patients we confirm already established risk factors for thrombosis (age over 60 and past thrombosis) and provide data about distribution of these patients to different risk categories for thrombosis according old and IPSET risk stratification models.

STUDY OF GSTM1 AND GSTT1 POLYMORPHISM IN CERVICAL CANCER PATIENTS

Lina Daukantiene[1], Diana Schveigert[1], Egle Kinderyte[2], Julija Fadejeva[1], Janina Didziapetriene[1,2]

1 National Cancer Institute, Vilnius, Lithuania
2 Faculty of Medicine, Vilnius University, Vilnius, Lithuania

Introduction. Glutathione S-transferases (GST) constitute a superfamily of intracellular enzymes which play a key role in the metabolism of a large variety of the xenobiotic compounds, protect macromolecules from the reactive oxygen species and carcinogens. GSTM1 and GSST1 are isoenzymes capable to detoxify varieties of carcinogens. Genetic polymorphism (null genotype) in GST genes influences enzyme activities. The relationship between the null genotypes of GSTM1 and GSTT1, and susceptibility to cancer is still an open question.

The aim of this study was to analyze the polymorphism in GSTM1 and GSTT1 genes in blood of healthy women, women with precancerous squamous intraepithelial lesions and women with cervical cancer.

Materials and methods. The study included 106 women (31 healthy women, 39 patients with precancerous cervical lesions, 36 patients with cervical cancer). Patients were treated in Radiation and Medical Oncology Center at Institute of Oncology, Vilnius University. DNA was extracted from whole blood using „QIAamp DNA Blood Mini Kit" (Qiagen, Germany). Polymorphism (null or wild-type genotypes) in GSTM1 and GSTT1 genes was determined by the multiplex polymerase chain reaction method. A $\chi 2$ test was used to analyze association between polymorphism and clinicopathological parameters. The results were considered as statistically significant when $p<0,05$.

Results. In the control group only wild-type genotypes of GSTM1 and GSTT1 were identified. In the group of patients with precancerous lesions the frequency of GSTM1 null genotype was 12,8%, for GSTT1 – 2,6%. In the group of patients with cervical cancer the frequency of GSTM1 null genotype was 41,7%, for GSTT1 – 22,2%. In comparison between control group and precancerous lesions group a significant distribution of GSTM1 and GSTT1 polymorphism variants was observed (p=0,008; p=0,01). The similar results was found between control group and cervical cancer group (p=0,001; p=0,005).

Conclusions. The knowledge about GSTM1 and GSTT1 polymorphism in cervical cancer is still insufficient. Further investigations could provide better understanding of different GST gene expression in the cervical carcinogenesis, modify screening recommendations and improve treatment opportunities.

THE IMPACT OF ANTIOXIDATIVE STATUS FOR CERVICAL CANCER CARCINOGENESIS AND ITS PREDICTIVE SIGNIFICANCE DURING NEOADJUVANT CHEMOTHERAPY AND CHEMORADIOTHERAPY OF LOCALLY ADVANCED CERVICAL CANCER

Lina Daukantiene, Konstantinas Povilas Valuckas, Birute Kazbariene, Aurelija Krikstaponiene, Janina Didziapetriene

National Cancer Institute, Vilnius, Lithuania

Background and objective. To compare the antioxidative status of cervical cancer patients with healthy controls and patients with HSIL (high-grade squamous intraepithelial leasions) and to determine the changes of the antioxidative status during neoadjuvant chemotherapy followed by concurrent chemoradiation for patients with stage IIB–IIIB cervical cancer, and to evaluate its significance to the efficacy of the treatment.

Material and methods. 36 patients with stage IIB–IIIB cervical cancer were enrolled in the study. A short course of intensive weekly neoadjuvant cisplatin and gemcitabine chemotherapy followed by concurrent weekly cisplatin and gemcitabine-based chemoradiation was administered. Blood samples were collected and the levels of reduced glutathione (GSH) and glutathione S-transferase (GST) were measured before the start of the treatment, after the neoadjuvant chemotherapy (before the chemoradiation) and 2 months after the end of the chemoradiation. Single blood sample for the GSH and GST analysis was taken from 31 healthy women and 27 patients with HSIL.

Results. The levels of GSH and GST significantly differed ($p = 0.0001$ and $p = 0.0008$, respectively) between the patients with cervical cancer, the healthy controls and the patients with HSIL. A statistically significant increase in the concentration of GSH after neoadjuvant chemotherapy for the cervical cancer patients was identified. After chemoradiation, values of this rate significantly decreased in contrast with GSH concentration after neoadjuvant chemotherapy in cases of stage IIB, regional metastases negative patients group, patients with a positive response to treatment, and patients who had no progression of the disease during the first 2 years after treatment. Statistically significant changes in GST during the treatment were not identified; the GST concentration after chemoradiation showed a statistically significant difference in GST concentrations in terms of the progression of the disease and disease without progression.

Conclusions. The antioxidative status is altered in patients with cervical cancer and in patients with HSIL in comparison with the healthy controls. These data shows the possible impact of the antioxidative status for the development of cervical cancer. Furthermore, the results suggest that the changes in the concentration of GSH during the treatment of locally advanced cervical cancer are important for the prediction of the efficacy of the treatment. Statistically significant changes in GST concentration levels during the treatment were not observed.

ERCC1 POLYMORPHISM IN BLOOD OF NSCLC PATIENTS

Julija Fadejeva, Diana Schveigert, Nora Krivoscenkaite, Saulius Cicenas

National Cancer Institute, Vilnius, Lithuania

Introduction. Lung cancer is a leading cause of cancer death worldwide. Platinum-based drugs (cisplatin, etc.) are used as a first-line therapy for non-small cell lung cancer (NSCLC) patients. However, not for all patients such treatment is effective. Biomarkers that could predict efficiency of the platinum-based treatment should be identified. Such potential biomarkers of tumor sensitivity to chemotherapy drugs could be single nucleotide polymorphisms in DNA nucleotide excision repair system (NER) genes. Enzymes of this system are essential for the recognition and removal of cisplatin-induced DNA adducts.

Aim. The aim of this study was to investigate single nucleotide polymorphisms in NER genes and their association with NSCLC.

Materials and methods. The study included 39 NSCLC patients treated at Department of Thoracic Surgery and Oncology at Institute of Oncology, Vilnius University. DNA was extracted from whole blood using „GeneJET Genomic DNA Purification Kit" (Fermentas, Lithuania). Four polymorphisms, ERCC1 (118 codon C→T), RRM1 (-37 C→A), RRM1 (-524 C→T) and XPF (-357 A→C) were analyzed by polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP) method. Final products were electrophoresed onto agarose gel. A $\chi 2$ test was used to analyze polymorphisms in relation to clinicopathological parameters. The results were considered as statistically significant when $p<0,05$.

Results. All four polymorphisms in NER genes were identified. Polymorphisms were evaluated according to the disease stage, tumor differentiation grade and histological type, lymph node status, response to treatment. The analysis showed that there is a significant association between ERCC1 (118 codon C→T) polymorphism and disease stage. ERCC1 118 codon CT variant was found more frequently in NSCLC patients with the I stage ($p=0,01$). Furthermore, patients with ERCC1 118 codon CT variant had a better response to treatment than those with CC and TT variants ($p=0,009$). There were no statistical correlations between other polymorphisms and clinicopathological parameters.

Conclusions. Polymorphisms in DNA repair genes may be associated not only with cancer risk, but also with clinical outcome of the patients after anticancer therapy. This study shows that ERCC1 polymorphism may be related with the response of platinum-based chemotherapy in NSCLC patients. Additional studies with larger population should be done.

FIRST CLINICAL EXPERIENCE IN TRANSPERINEAL BIOPSY OF PROSTATE

Albertas Ulys, Alvydas Vezelis, Zygimantas Kardelis, Arunas Kulboka

National Cancer Institute, Vilnius, Lithuania

Introduction. Prostate cancer (PCa) is the most common malignant neoplasia among men in Lithuania, though it presents low mortality rate. As a result of earlier detection and improved treatment, survival for men with prostate cancer is increasing globally. A new diagnostic method – transperineal biopsy of prostate (TPBP) is launched in 2013 in Institute of Oncology of Vilnius University. This method has higher detection rate compare with transrectal biopsy and has possibility to localise PCa (due to a grid coordination). Due to results of TPBP, localised and preserving function of prostate treatment such as focal radiotherapy or focal cryotherapy becomes possible.

Indications for Transperineal Biopsy of Prostate. Remaining of suspicion of PCa after negative transrectal prostate biopsy (TB); Suspicion of progression of PCa after radiotherapy and exact location detection of local recurrence; Accuracy of samples which are taken according to MRI exams (MRI pseudonavigation); To reject or approve a progression of PCa for patients in active surveillance; For persons with pathology of the rectum when is TB contraindicated.

Specific features. Hospitalization and general anesthesia are requiring. Procedure lasts about 1 hour time. An additional hardware is needed.

Material. From Jan 2013 until now 49 procedures were been performed for: 26 patients after ext. beam radiation; 17 - with remaining of suspition of PCa after negative TP; 6 - for patients in active surveillance. Age of patients: 51-78yo (av.60.5yo). PSA 0.7 to 31.6 ng/ml (av. 10.2 ng/ml). Total number of taken columns per procedure 14-24 (av.18).

Conclusion. PCa has been proved, localised or progression of PCa has been detected and in 39 of 49 cases due to TBPB. Progression of PCa was been found in 32 cases and radical treatment has been performed: second line radiotherapy, cryotherapy or radical prostatectomy. Our results shows that this method has higher detection rate compare with transrectal biopsy also and was been possible to localise PCa (due to a grid coordination) location. Due to received results of TPBP, localised and preserving function of prostate treatment such as focal radiotherapy or focal cryotherapy becomes possible to discuss. Short term data seems to be promising but longer term follow-up is necessary.

PROGNOSTIC AND PREDICTIVE VALUE OF MOLECULAR BIOMARKERS: SURVIVIN AND HYPOXIA INDUCIBLE FACTOR 1 ALFA IN CLEAR CELL RENAL CARCINOMA

Evita Gasenko, Alinta Hegmane, Māris Sperga

Riga East University Hospital, Latvian Oncology Centre, Riga, Latvia

Objective. The aim of this study is to cast further light on the issues related to prognostic and predictive factors of renal clear cell carcinoma (RCC), assessing expression of survivin and hypoxia inducible factor 1 alfa (HIF 1α) in a subset of primary RCC and determine its relation to number of metastatic sites, disease free survival, progression free survival, prediction of the response to therapy and overall survival. We tested a hypothesis that HiSu index (tumour grade + survivin – HIF 1α) correlates with above mentioned clinical features and course of the disease.

Methods. The present series consisted of tissue samples obtained from 36 Latvian patients with stage I, II, III or IV clear cell RCC. Survivin was stained using *monoclonal Mo a Hu Survivin, Clone 12C4* (evaluating staining intensity from 1 - 3), hypoxia inducible factor 1 alfa *with mouse monoclonal (mgc3) to HIF-1* (evaluated as positive or negative), clear cell histopathology and differentiation grade was analysed in haematoxylin and eosin stained samples.

Results. Overall 19 (53%) tissue samples stained positive for survivin and 21 (58%) for HIF 1α. We did not find any statistically significant correlation with number of metastatic sites, disease free survival, progression free survival, prediction of the response to therapy and overall survival analysing these biomarkers separately. We found HiSu index's negative correlation with number of metastatic sites (*Spearman's Rho p = 0.00*), time of progression for patients receiving targeted therapy (*age adjusted Spearman's Rho p = 0.042*) and overall survival (*Spearman's Rho p = 0.015*).

Conclusions. HiSu index in clear cell RCC may identify patients at risk of more aggressive disease and worse prognosis. Further investigations on a larger number, more heterogeneous population, should be carried out to validate our results.

GENE METHYLATION PROFILE IN GASTRIC CANCEROUS TISSUE ACCORDING TO STOMACH TUMOR SITE

Rita Kupcinskaite-Noreikienė, Rita Ambraziene, Rasa Ugenskiene, Elona Juozaityte

Lithuanian University of Health Sciences,Oncology Institute, Kaunas, Lithuania

Introduction. Epigenetic factors play an important role in the development of gastric cancer. Recently we acquired a considerable amount of data related to methylation of promoter of different genes involved in the gastric cancer formation. But there is a lack of information describing how this epigenetic process differs depending on the tumor site in the stomach.

Aim. To assess the profile of the expression of methylated *MLH1, MGMT, DAPK* genes in the cancerous tissue according to the tumor site in the stomach.

Methods. Epigenetic analysis of the cancerous tissues was performed. Samples were acquired from 81 patients suffering from the stomach cancer adenocarcinoma (9 patients with upper third stomach cancer, 39 with middle third and 33 lower third tumor) who underwent surgeries for gastric cancer in LUHS Hospital Kaunas Clinics during 2009–2011. Gene methylation was investigated using methylation specific PCR. Statistical analysis was performed using SPSS software. Study was approved by the Regional Biome¬dical Research Ethics Committee.

Results. *MLH1* gene methylation in the upper middle and lower third cancerous tissue was respectively (11.1 %, 23.1%, 45.4 %), *MGMT* (22.2 %, 30.8 %, 57.6 %), *DAPK* (44.4 %, 48.7 %, 51.5%). Methylation of genes *MLH1, MGMT* was observed more often in the lower stomach third compared to the upper third cancerous tissue ($p<0.05$). Results of our study indicate that there is an inverse correlation between methylation of genes *MLH1, MGMT* in the cancerous tissue when tumor was localized in the lower third of stomach (coefficient: -0.48, p-0.01). An inverse correlation between methylation of *DAPK* and MLH1 was also determined in the middle third of stomach cancer tissue (coefficient: -0.41 p-0.01). In the middle third gastric cancer tissue *DAPK* promoter methylation was related with more advanced disease in regional lymph nodes N2-3 compared to N0-1 (p-0.02).

Conclusion. Our study results show that epigenetic process – methylation of gene promoter in the cancerous tissue could depend on tumor localization in the stomach.

STEMNESS AND GENETIC STABILITY OF HUMAN MESENCHYMAL STEM CELLS ISOLATED FROM ULTRALOW BONE MARROW VOLUME

Gabrielis Kundrotas[1, 2], Zivile Gudleviciene[2], Evelina Gasperskaja[1], Grazina Slapsyte[1]

1 Department of Botany and Genetics, Faculty of Natural Sciences, Vilnius University, Vilnius, Lithuania
2 Biobank, National Cancer Institute, Vilnius, Lithuania

Background and objective. Mesenchymal stem cells (MSCs) have emerged as a promising approach for regenerative medicine strategies. Generally high volumes of bone marrow aspirates are taken and isolated MSCs are expanded ex vivo for multiple times in order to generate sufficient numbers of cells relevant to clinical use. However, aspiration is invasive and painful and excessive expansion is related to development of MSCs functional and genomic alterations. The object of this study to investigate stemness and genetic characteristics of MSCs, isolated from ultralow bone marrow volume (0.5 ml), during different periods of long-term culturing.

Material and methods. MSCs were isolated from bone marrow using red blood cell lysis method and expanded in culture. Investigation of morphology, proliferation kinetics, viability, cell senescence and chromosomal stability was carried out.

Results. MSCs were efficiently isolated and expanded in culture to passage 10. Stemness and chromosomal stability of MSCs did not change at least to passage 6.

Conclusions. In this study we showed that mesenchymal stem cells can be isolated from ultralow bone marrow volume (0.5 ml) that is residual after bone marrow transplantation and there is no need to perform additional biopsies. The cells can be significantly propagated ex vivo and retain stemness properties and genetic stability.

LAPAROSCOPIC COLORECTAL SURGERY AT THE NORTH ESTONIA MEDICAL CENTRE: TEN YEARS OF CLINICAL EXPERIENCE

Indrek Seire

Surgery Clinic, North Estonia Medical Centre

Introduction. Laparoscopic colorectal surgery program was introduced at the North Estonia Medical Centre (NEMC) in 2003. The aim of the study was to analyze the outcomes of laparoscopic colorectal surgery within a ten-year period (2003-2012) and to compare our results with the published historical material.

Methods. All laparoscopic colorectal interventions performed at the NEMC were retrospectively reviewed. Patient data collected included diagnosis, type of operation, operation time, conversion rate to open surgery, intraoperative and postoperative complications, and hospital length of stay (HLOS).

Results. Overall, 474 laparoscopic operations were performed with the conversion rate of 16%. Median age of the patients was 68 and BMI 26. Female to male ratio was 59% to 41%. Diagnostic groups included malignant tumors, benign tumors, and inflammatory bowel diseases at 90%, 5% and 5%, respectively. In malignant tumors the tumor stages were stratified into stage 0: 1%, stage I: 18%, stage II: 46%, stage III: 23%, and stage IV: 13%. Overall, 34% of the operations were right hemicolectomies, 25% sigmoid resections, 19% rectal resections, 12% left hemicolectomies, and 7% abdominoperineal exsisions. Median HLOS for colon resections and rectal resections were 8.3 and 9.1 days, respectively. The total complication rate was 23% including anastomosic insufficiency at 4,1%. Readmissions occurred in 4,2% of cases. Postoperative mortality rate was 0.6%. Postoperative outcome measures were comparable with the published literature.

Conclusion. The overall complication measures and conversion rate of laparoscopic colorectal interventions performed at the NEMC are comparable to historical material. Further prospective evaluation of our results is warranted.

ADAPTIVE PROSTATE BRACHYTHERAPY WITH I-125 IMPLANTS: RESULTS ON EARLY AND LATE TOXICITY

Andrius Ivanauskas, Eduardas Aleknavicius, Arvydas Burneckis, Ernestas Janulionis

National Cancer Institute, Vilnius, Lithuania

Introduction. It's about three decades when prostate brachytherapy with radioactive implants has been performed in cancer treatment practice. The transrectal ultrasound guidance let this method to develop and to become more and more usable. According ESTRO/EAU/EORTC recommendations – dose to the target (prostate) must be 145 Gy or higher. It is essencial condition to reach good treatment results. Consolidation of various MRI regimes (T2, MRI diffusion, perfusion, spectroscopy) can give us this information, which nor other method can. Because of this we can use multiparametrical MRI not for only diagnostic but also brachytherapy planning purposes. We define adaptive radiotherapy or brachytherapy as radiation tumour treatment, when radiation dose is delivered to the exact tumour (focal therapy) or when there are several volumes with different radiation doses. According to the literature – prostate brachytherapy with I-125 implant is not part of adaptive prostate treatment protocols, but technically is possible and could be an ideal method of adaptive prostate cancer treatment.

Objectives. In 2010 in Institute of Oncology Vilnius University we initialized clinical study called "Adaptive prostate cancer treatment with I-125 implants, safety and efficacy study". It is open prospective non-randomized study. In this review we will concentrate on giving the early and late radiation toxicity results of our study and shortly deliver some our experience about impact of US and MRI in prostate tumour diagnosis and treatment with adaptive I-125 brachytherapy.

Methods and materials. From July 2011 until December 2013 52 (50 planned) patients who had favorable risk cancer took part in this study. The age of the patients was 49 – 75 years. Patients' T were from cT1c to cT2c. PSA level 3,13 – 14,6 ng/ml. Gleason score of all patients – 6. All these low and intermediate risk prostate cancer patients undergone the procedure of real time planned low dose rate (LDR) brachytherapy with I-125 prostate implants. During the adaptive prostate low dose rate (LDR) brachytherapy (BT) with I-125 implants we have done dose escalation 200 Gy or more to the prostate malignant lessions defined with biopsy, MRI and/or US and the dose to the other prostate area were homogeneous and reached not less than 160 Gy (from 167 Gy – to 194 Gy).

Results. This is a table with incidence and degree of early (until 6 mths. after treatment) and late (after 6 mths. after treatment) genitourinary (GU) and gastrointestinal (GI) toxicity of adative prostate LDR BT study.

DEGREE OF TOXICITY	INCIDENCE OF GU TOXICITY, PERCENT (N)		INCIDENCE OF GI TOXICITY, PERCENT (N)	
	Early	Late	Early	Late
I	76 (40)	30 (16)	15 (8)	not observed
II	13 (7)	13 (7)	13 (7)	11 (5)
III	11 (5)	not observed	not observed	not observed

Conclusions. Acute GU toxicity is presenting in all patients, but there are very low count of III toxicity. Late grade II GI toxicity manifested with blood traces in faeces, which were managed with medicines. Late toxicity rates of our study is similar to those demonstrated by other authors. Still our adaptive brachytherapy methodic is very new ground in brachytherapy and the count of patients either follow up period is very short, so we should keep on doing this technique and keep on going with follow up of these patients to get more confident results on toxicity. PSA dynamics and quality of life also demonstrated good results, which will be presented in this review.

INFLUENCE OF POSTIMPLANT DOSIMETRY TIME TO EVALUATION OF IODINE-125 IMPLANTATION RESULTS

Laimonas Jarusevicius, Arturas Inciura, Elona Juozaityte

Oncology institute of Lithuanian University of Health Sciences, Kaunas, Lithuania

Purpose. CT based postimplant dosimetry is recognised quality assurance tool for permanent prostate brachytherapy and is recommended for all patients, treated with low dose rate brachytherapy. Searching for an answer to a question – what time is optimal to postimplant dosimetry, we have compared dosimetric parameters from examination on 1 and 30 postimplant days for group of 38 patients, treated with Iodine-125 brachytherapy.

Methods. All of the implantations were performed under transrectal ultrasound (TRUS) guidance using real-time dynamic dosimetric planning. Patients underwent computed tomography scanning for post-implant dosimetric evaluation of the seeds implantation on 1(Day 1) and 30 (Day 30) postimplant days. 2.5 mm-thick images were obtained at 2.5 mm intervals from 2 cm above the most superior seed to 2 cm below the most inferior seed. The images were transferred to the treatment planning system for analyses by the local area network. The following parameters were compared: the radiation dose to 90% of the prostate volume (D90), the radiation dose to 30% of the urethral volume (DU30), the percentage of the prostate volume receiving 100% or 200% of the prescribed dose (V100 or V200, respectively), the percentage of the rectal volume receiving 100% of the prescribed dose (VR100).

Results. Prostate volume changed from 39.6 ± 9.6 cm^3 before brachytherapy to 42.8 ± 11.0 cm^3 during implantation procedure. On postimplant examinations, prostate shrinked to 41.8 ± 10.8 cm^3 on first postimplant day and to 37.4 ± 9.4 cm^3 on 30 postimplant day.

Dosimetric parameters, representing prostate coverage, V100 and D90, on the first postimplant day examination were lower, that achieved intraoperative (V100 – 98.8 ± 1.3 % vs. 92.7 ± 4.7 %, D90 – 185.7 ± 7.5 Gy vs. 167.5 ± 12.2 Gy). 30 day dosimetry showed increase in V100 and D90 values, nearly reaching intraoperative levels (V100 – 95.1 ± 3.4 %, D90 – 178.01 ± 12.3 Gy). Similar changes were observed for urethra and rectal irradiation. Intraoperative urethra Du30 value was 193.2 ± 6.0 Gy, on the first day dosimetry – 178.7 ± 18.1 Gy and 197.6 ± 19.5 Gy 30 days after implantation. Intraoperative rectal VR100 was 0.14 ± 0.12 cm^3, on the first day dosimetry – 0.1 ± 0.18 cm^3 and 0.28 ± 0.31 cm^3 30 days after implantation.

Conclusions. Results of 1 day dosimetry showed lower values for implant quality indicators – V100 and D90. These changes are determined by changes in prostate volume and resulting seeds shift. With the time, prostate edema goes down and distance between I-125 sources also decreases, resulting in increase of dosimetric parameters, such as prostate V100 or D90. Changes in urethra and rectal irradiation also are influenced by tissue injury and edema during brachytherapy procedure. Therefore more precise and reliable dosimetric evaluation could be achieved on delayed (Day 30) postimplant dosimetry.

CLINICAL FACTORS THAT MAY INFLUENCE OUTCOME FOR STAGE II-III RESECTABLE RECTAL CANCER PATIENTS TREATED WITH NEOADJUVANT CHEMORADIOTHERAPY OR SHORT-TERM RADIOTHERAPY

Laura Kairevice[1], Aleksandras Petrauskas[1], Henrikas Pauzas[2], Tadas Latkauskas[2], Algimantas Tamelis[2], Zilvinas Saladžinskas[2], Irina Gineikiene[3], Sigita Liutkauskiene[1], Dainius Pavalkis[2], Laimonas Jarusevicius[1], Rasa Janciauskiene[1]

1 Lithuanian University of Health Sciences, Department of Oncology and Haematology
2 Department of Surgery
3 Department of Radiology, Kaunas, Lithuania

Background. The aim of this study was to analyse clinical factors that may influence the effectiveness of conventional chemoradiotherapy (CRT) and short-term radiotherapy (RT) followed by delayed surgery in stage II-III rectal cancer patients.

Methods. The results of the randomized trial (ClinicalTrials.gov, Identifier NCT 00597311) were analysed. 150 patients with stage II-III rectal cancer were randomized to two neoadjuvant treatment arms: conventional CRT (50 Gy/25 fractions in 5 weeks, 2 Gy per fraction, and two cycles of 5-FU/Leucovarin, 400 mg/m2 of fluorouracil i/v in combination with leucovorin 20 mg/m2 i/v for 1-4 days on the first and on the fifth week) and short-term RT (5 Gy 5 fractions, total dose 25 Gy) followed by surgery at 6-8 weeks. Patients groups were homogeneous according to the sex, age, tumor site, clinical stage and other parameters. The univariate (Table 1) and multivariate (table 2, 3) analysis of the predictive value of clinical factors on 5 y. OS and DFS was performed.

Results. 5-years overall survival (OS) was 64.8% vs. 77% in RT group and CRT groups respectively ($p=0.135$). 5-years disease free survival (DFS) was 44.5% vs. 71.6% in RT and CRT groups respectively ($p=0.012$).

Table 1. Univariate analysis for DFS and OS

CLINICAL FACTORS		5 y. DFS (CRT vs RT)	5 y. OS (CRT vs RT)
Sex	Men	75.3% vs 40.9% (p=0.012)	84.2% vs 64% (p=0.055)
	Women	60.7% vs 49.9% (p=0.435)	59% vs 65.5% (p=0.876)
Age	≤65 y	77.8% vs 55.5% (p=0.154)	81.4% vs 89.3% (p=0.439)
	>65 y	64.4% vs 36.8% (p=0.114)	71.8% vs 50.5% (p=0.127)
Tumor site, distance from anal verge (cm)	<5	70.5% vs 40.7% (p=0.083)	76.3% vs 72.9% (p=0.842)
	5–10	75% vs 51.9% (p=0.143)	81.3% vs 54.8% (p=0.040)
	>10	53.3% vs 50% (p=0.732)	53.3% vs 75% (p=0.549)
Clinical stage	II	86.7% vs 36.5% (p=0.006)	86.7% vs 61.9% (p=0.080)
	III	66.3% vs 48.1% (p=0.228)	73.2% vs 66.5% (p=0.517)
Sex	**Men**		
Age	≤65 y	76,5% vs 49% (p=0,156)	82,1% vs 92,9% (p=0,536)
	>65 y	72,7% vs 36,2% (p=0,120)	86,4% vs 47,6% (p=0,048)
Sex	**Women**		
Age	≤65 y	80% vs 64,8% (p=0,560)	80% vs 83,3% (p=0,615)
	>65 y	30% vs 39,2% (p=0,730)	27,8% vs 54,6% (p=0,838)

Table 2. Multivariate analysis for DFS

CLINICAL FACTORS		P value	HR (95% CI)
Sex	Men	–	1,0
	Women	0,837	0,938 (0,510- 1,725)
Age	≤65 y	–	1,0
	>65 y	0,063	0,577 (0,323-1,030)
Tumor site, distance from anal verge (cm)	<5	0,831	1,0
	5–10	0,753	1,187 (0,407- 3,461)
	>10	0,997	1,002 (0,336- 2,990)
Clinical stage	II	–	1,0
	III	0,810	1,083 (0,566- 2,070)
Sex	**Men**		
Age	≤65 y	0,166	2,165 (0,726- 6,455)
	>65 y	0,127	1,979 (0,824- 4,753)
Sex	**Women**		
Age	≤65 y	0,565	1,692 (0,282- 10,139)
	>65 y	0,731	1,218 (0,397- 3,733)
Neoadjuvant treatment	CRT	–	1,0
	RT	0,037	1,830 (1,037-3,229)

Table 3. Multivariate analysis for OS

CLINICAL FACTORS		P value	HR (95% CI)
Sex	Men	–	1,0
	Women	0,260	0,663 (0,324- 1,355)
Age	≤65 y	–	1,0
	>65 y	0,005	0,314 (0,140- 0,704)
Tumor site, distance from anal verge (cm)	<5	0,672	1,0
	5–10	0,574	0,696 (0,196- 2,467)
	>10	0,929	0,944 (0,270- 3,304)
Clinical stage	II	–	1,0
	III	0,567	1,253 (0,579- 2,712)
Sex	**Men**		
Age	≤65 y	0,544	0,507 (0,056- 4,546)
	>65 y	0,059	3,027 (0,957- 9,575)
Sex	**Women**		
Age	≤65 y	0,620	0,545 (0,049-6,015)
	>65 y	0,838	0,883 (0,268-2,913)
Neoadjuvant treatment	CRT	–	1,0
	RT	0,323	1,424 (0,706- 2,872)

Conclusion. In univariate analysis, CRT improved DFS comparing with RT in stage II patients but we did not find significant difference in 5 y. DFS and OS between CRT and RT in stage III rectal cancer patients. CRT improved OS (p=0.048) in older than 65 year men. CRT also improved OS (p=0.04) in patients with middle rectum cancer.

In multivariate analysis, only neoadjuvant CRT had a statistically significant influence for better DFS, and age of >65 years had a tendency for better DFS. In OS, only older age (independently of sex) had a statistically significant difference. In CRT group, there was a tendency for better OS in older men.

According to the results, age of >65 years is the only independent factor for choosing neoadjuvant chemoradiotherapy comparing with short-term radiotherapy alone for locally advanced initially resectable rectal cancer. The other clinical factors, such as older than 65 years men, cancer localization in the middle part of the rectum and stage II rectal cancer could be taken into consideration to have an influence for patients outcome (homogeneity of groups, univariate analysis, tendency in multivariate analysis).

EVALUATION OF DNA MISMATCH REPAIR SYSTEM PROTEIN EXPRESION IN ENDOMETRIAL CARCINOMAS

Daiva Kanopiene[1], Aida Laurinaviciene[2], Raimundas Meskauskas[2], Saule Uleckiene[1], Konstantinas Povilas Valuckas[1]

1 National Cancer Institute, Vilnius, Lithuania
2 National Centre of Pathology, Affiliate of Vilnius University Hospital Santariškių Clinics, Vilnius, Lithuania

Background. Mismatch repair (MMR) proteins is a group of nuclear enzymes, which in all proliferating cells participate in repair of base-base mismatch, that occur during DNA replication. Loss of MMR proteins leads to an accumulation of DNR replication errors in cells, particularly in areas of he genome with short repetitive nukleotide sequences, a phenomen known as microsatellite instability (MSI). MMR protein deficiency in cells is closely related to a high degree of MSI (MSI-H). MSI most often (about 90%) is detected in tumors related to Lynch syndrome, but may be found in sporadic tumors, especially colorectal and endometrial, as well.

Objective. To detect and evaluate the expression of MMR system protein (MLH1, MSH2, MSH6, and PMS2) in endometrial carcinomas containing a MSH-H.

Material and methods. 109 women with endometrial tumor were enrolled in the study. MSI status was tested by standart polymerase chain reaction – based method using PROMEGA (USA) recommended 5 mononucleotide markers (BAT-25, BAT-26, NR-21, NR-24, and MONO-27). MMR protein expression in tumor paraffin blocks was analysed immunohistochemistry only for patients whose tumors showed MSI-H.

Results. Overall, MSI-H was found in 15.6% of patients (n=109). In these cases only endometrioid type adenocarcinoma was detected. Immunohistochemistry analysis showed that in 94.1% of cases (n=17) was a loss of expression of at least one examinated protein. Loss of MLH1/PMS2 expression was the most frequent – 75%; MSH2/MSH2 – 6.2%; PMS2 or MSH6 – 12,5% each.

Conclusions. 94.1% of MSI-H correlated with the loss of MMR proteins expression, which was detected by immunohistochemistry. Although IHC according to the literature data, has lower sensitivity with more appearent staining inadequancies in detecting MSI in endometrial carcinoma than it does in colorectal carcinoma, its use in endometrial carcinoma may be an important adjunct when screening for hereditary cases. In the future as prognostic implications of MSI phenotype become better defined, it may be reasonable to perform IHC for DNA MMR proteins in large numbers of endometrial carcinomas.

THE FIRST EXPERIENCE IN RADICAL LAPAROSCOPIC PROSTATECTOMY

Kardelis Z., Sukys D., Kulboka A.

National Cancer Institute, Vilnius, Lithuania

Purpose. In 1998 Guillonneau and Vallancien introduced laparoscopic radical prostatectomy with primary access to the seminal vesicles. The laparoscopic approach for radical prostatectomy offers an alternative to the open surgical procedure with. We started to perform laparoscopic radical prostatectomies in our department in December 2013. We report on our experience with first 4 laparoscopic prostatectomies.

Materials and methods. 4 men underwent laparoscopic radical prostatectomy. We used extraperitoneal approach with 5 trocars. Dissection of the prostate was performed starting from the prostatovesical junction tovards the the urethra. “Tennis racket” shape bladder neck reconstruction was required in 3 cases. Anastomosis performed using Van Velthoven technique in all cases.

Results. From December 2013 to May 2014, we performed 4 laparoscopic radical prostatectomies. These included only patients with the prostate cancer stage cT1c at the initial evaluation. The mean PSA concentration was 4.5 ng/ml. All patients had no previous abdominal or transurethral surgery. All prostatectomies performed with bilateral interfascial neurovascular bundles sparing. All 4 procedures completed without intraoperative complications. No case required conversion to open surgery. The average operating time was 275 min. Mean blood loss was 385 ml. One patient required postoperative blood transfusion. The average postoperative hospital stay was 7 days. There was postoperative bleeding and urinary bladder cloth tamponade with subsequent Foley catheter migration. Trocar epicystostomy followed by endourological urinary bladder catheter repositioning were performed. There were no positive surgical margins on histological examination.

Conclusions. Laparoscopic radical prostatectomy is an ambitious procedure with a steep learning curve, especially for the laparoscopic dissecting and suturing technique. The excellent sight for dissection results in a reduced intraoperative blood loss, less postoperative pain, shorter hospital stay and catheterization time. The procedure should be performed only at dedicated centers with adequate training and expertise.

COMPARISON OF ICRU AND D2CC DOSES OF BLADDER AND RECTUM IN HIGH-DOSE-RATE BRACHYTHERAPY OF CERVICAL CARCINOMA

Rasa Kavolelyte, Arturas Inciura

Lithuanian university of Health sciences, Kaunas, Lithuania

Introduction. Intracavitary brachytherapy plays an important role in the definitive treatment of cervical carcinoma. In brachytherapy for cervical carcinoma, doses to organs at risk are traditionally calculated using the ICRU-38 point doses to rectum and bladder. Usually in case of locally advanced cervical cancer dose to the tumor is as big as bladder and rectum can tolerate. The doses are related to late toxicities, and so brachytherapy plans have been optimized if these doses exceed acceptable limits. However, anatomically, these points may not represent the maximum doses to organs at risk (bladder and rectum). Three-dimensional image-guided brachytherapy allows assessment of organs at risk dose with dose volume histograms (DVHs). Point doses in regions of steep dose gradients are becoming less clinically meaningful. The purpose of this study was to analyze the correlation between dose volume histograms and ICRU point doses.

Materials and methods. Using the PLATO Planning system, the bladder and rectum were prospectively contoured on 336 CT datasets for 112 patients treated with definitive concurrent chemoradiation. All patients were treated with a standart dose of external-beam radiation therapy consisting of whole pelvic radiation 50 Gy in 2 Gy fractions over 5 weeks concurrently with cisplatin 40 mg/m2, weekly. Brachytherapy was delivered using a standart Fletcher's applicator to a dose of 21 Gy in three fractions. Three-dimensional treatment planning was applied. DVHs were calculated, and the minimum dose to 2cc of tissue receiving the highest dose (D2cc) was recorded and compared with the ICRU point doses (DICRU). Bivariate correlation was used to assess the relationship between variables, and Pearson's correlation coefficient was computed for these relationships. Results are presented as mean ± standart deviation.

Results. The mean dose to bladder DICRU was 6.2 ± 2.0 Gy compared with D2cc of 6.4 ±1.03 Gy. The mean rectal DICRU was 5.1 ± 1.11 Gy compared with D2cc of 4.0± 0.87 Gy. The mean dose ratios (D2cc/DICRU) were 1.03 for bladder and 0.78 for rectum. DICRU correlated with D2cc for bladder ($r=0.72$, $p<0.01$) and for rectum ($r=0.57$, $p<0.01$).

Conclusions. Rectal dose measured in 2cc (D2cc) was significantly lower than the rectal dose measured in ICRU point (DICRU), but bladder dose measured in 2cc (D2cc) was higher than dose in ICRU point (DICRU). The significant correlation between D2cc and DICRU allows set DVH dose constrains for CT-based brachytherapy.

INFLUENCE OF SURGICAL TREATMENT ON TNF-A AND TGF-B LEVELS IN PATIENTS WITH BREAST CANCER

Birute Kazbariene, Regina Liudkeviciene, Renatas Tikuisis, Aurelija Krikstaponiene, Valerijus Ostapenko

National Cancer Institute, Vilnius, Lithuania

Background and aim. Removal of the tumor is the main treatment for breast cancer. The changes of the levels of pro- and anti-inflammatory (TNF-α and TGF-β) cytokines in postoperative period are related not only to the wound healing but also may influence further course of the disease. Proinflammatory cytokines are involved in the pathogenesis of different human tumors. TNF-α is pluripotent cytokine mediating the host response to injury and it is also an important tumor promoting factor. But on the other hand it possesses antitumor effect. TNF-α role in cancer biology is debated. High level of TGF-β in patients' plasma supresses immune system functions and increases the risk of breast cancer. Other authors state that low level of TGF-β is related with metastatic risk and poor disease prognosis. TGF-β characterizes antiproliferative effect in the early stage of breast cancerogenesis but promotes tumor progression in the advanced stage of the disease. The aim of our study was to estimate surgical treatment influence on cytokines TNF-α and TGF-β1 concentration changes in breast cancer patients' peripheral blood serum depending on the women's age and stage of the disease.

Patients and method. We investigated 71 women (age range 21 - 70 years) with breast cancer disease (stage 0 – III) who had mastectomy (n = 4) and breast conserving surgery (n = 67). Venous blood was tested before treatment, 2 hours after surgery and 5 days after surgery. Concentration of cytokines TNF-α and TGF-β1 was measured by ELISA. Patients were divided in two age groups – younger (≤ 50 years) and older (> 50 years) women.

Results. The study showed that level of TNF-α and TGF-β1 after surgery increased significantly compared with the level before surgery and 2 hours after surgery. The same changes of the TNF-α level were in younger and older age women's groups and in the groups of patients depending of the stage of the disease. Level of TGF-β1 in two age groups of women significantly increased after treatment also. Five days after surgery the level of TGF-β 1 significantly increased compared with level 2 hours after surgery in I stage breast cancer patients group and was higher 5 days after surgery compared with level before surgery and 2 hours after surgery in patients group with II stage of breast cancer. But in patients' group with the III breast cancer stage the level of TGF did not change after surgery.

Conclusion. The study showed that increased level of TNF-α may reflect organism reaction of tissue injury and also may be growth-promoting factor for tumor cells. Surgical treatment differently modulates TGF-β1 level depending on the stage of the disease.

THE EFFECT OF SIGNAL –INDUCING PROLIFERATION-ASSOCIATED GENE POLYMORPHISMS ON BREAST CANCER OUTCOMES

Erika Korobeinikova[1], Dana Myrzaliyeva[2], Rasa Ugenskiene[1], Danguole Raulinaityte[1], Jurgita Gedminaite[1], Elona Juozaityte[1]

1 Lithuanian University of Health Sciences, Oncology Institute
2 Republican Scientific Center for Emergency Care, Astana, Kazakhstan

Introduction. The last decades were marked by achievement in field of molecular biology, that has influence on prognosis of breast cancer patients. The germline polymorphisms have been reported to determine the susceptibility to the disease and its prognosis. Signal- inducing proliferation- associated protein 1 (SIPA1) and ribosomal RNR processing 1B (RRP1B) have been demonstrated to be involved in breast cancer metastasis, however the data are conflicting and the effect of those genes on breast cancer progression remains unclear.

The aim of work. This work aimed to analyze the influence of SIPA1 -313 G/A, 545 C/T, 2760 G/A and RRP1B 436 T/C polymorphisms on breast cancer progression.

Materials and methods. A group of 100 young (<50 years of age) early I-II stage breast cancer patients, with the permission of Ethics committee (protocol number BE-2-13), were included in this study. Genomic DNA was extracted from peripheral blood leukocytes with commercially available DNA extraction kit. The polymorphisms of SIPA1 and RRP1B were analyzed with polymerase chain reaction-restriction fragment length polymorphism assay (PCR-RFLP). The restriction endonuclease RsaI, BseGI, SsiI and Cfr13I were used for detection of SIPA1 -313 G/A, 545 C/T, 2760 G/A and RRP1B 436 T/C polymorphisms, respectively. Progression-free survival (PFS) was estimated using the Kaplan-Maier method. Hazard rates were compared using the log-rank test. Cox proportional hazards models were fit to the data to estimate hazard ratios (HR) and corresponding 95% confidence intervals.

Results. 23% of patients were documented with a progression during a follow- up period. The genetic polymorphism analysis showed the distribution of genotypes, which was as follows: SIPA1 -313 G/G -16%, A/A-34%, G/A-50%; SIPA1 545 C/C-83%, T/T-1%, CT-16%; SIPA1 2760 G/G-30%, A/A-14%, G/A-56%; RRP1B T/T-17%, C/C-35%, C/T-48%. Due to short follow-up period till now SIPA1-313, SIPA1-2760, RRP1B-436 polymorphisms showed no statistically significant association with disease progression in our study. SIPA1 545 C/C genotype has shown a longer PFS comparing with C/T (p=0.022). The risk of progression comparing C/T genotype vs C/C was 2.699 higher [HR: 2.699 (95proc. CI, 1.109 – 6.556), p=0.029].

Conclusion. Primary results of our study suggest that SIPA1 545 C/C genotype is associated with a better breast cancer outcomes.

THE RARE SURGICAL PROCEDURE: BILATERAL LAPAROSCOPIC EXTRAPERITONEAL URETEROCUTANEOSTOMY

Deimantas Sukys, Arunas Kulboka, Zygimantas Kardelis, Albertas Ulys

National Cancer Institute, Vilnius, Lithuania

Introduction. Percutaneous ultrasound guided nephrostomy is the procedure of choice in cases when palliative upper urinary tract drainage required. We want to present case of bilateral laparoscopic extraperitoneal ureterocutaneostomy for patient with complicated advanced multifocal cancer.

Patient and method. A man 54 years old with locally advanced carcinoma of the rectum and locally advanced prostate cancer with no proven distant metastases. Patient undergone distant actinotherapy and chemotherapy for rectal cancer and high dose radiotherapy for prostate cancer, resection of the rectum with subsequent closure of the ileostomy. After 7 months metastases in the liver were detected and chemotherapy and the ileostomy were performed again. The patient feels serious pelvic pain and annoying urine dripping from the rectum. MRT of the pelvis revealed rectovesical fistula with the periprostatic cavity 2x6 cm. The local inflammation in the minor pelvis and the great deterioration of the quality of life were continuously present because of continuous urine leakage from fistula. Because bilateral percutaneous nephrostomies could not fully assure that urine do not pass to the ureters the bilateral laparoscopic extraperitoneal ureterocutaneostomy was performed. The left and subsequently left ureter were extraperitoneally dissected maximally towards urinary bladder. The peritoneum was dissected from the abdominal wall laterally and ureters extracted through 5 mm trocars holes and sutured to the skin lateral to the rectus abdominis muscle and the ileostomy.

Results. Operating time was 190 min. Blood loss about 100 ml. No minor or major intraoperative or postoperative complications were observed. Rectal leakage stopped and the patient discharged from the hospital in the satisfactory status at postoperative day 7

Conclusion. The unilateral or bilateral laparoscopic extraperitoneal ureterocutaneostomy is safe and effective procedure in cases when the ensured interruption of the urine passage to the lower urinary tract is necessary.

RESULTS OF SURGICAL TREATMENT OF COLORECTAL CANCER LIVER METASTASES IN LATVIA ONCOLOGY CENTER

L. Lauka[1], G. Ancans[1,2], S.Gerkis[1], A. Pcolkins[1], V.Krumins[1], I. Nemiro[1,3], A. Strazdina[1], M. Leja[2], A. Sivins[1,2], I. Kreice[1]

1 Latvia Oncology Center, Riga East Clinical University Hospital, Riga, Latvia
2 University of Latvia, Riga, Latvia
3 Riga Stradins University, Riga, Latvia

Introduction. Colorectal cancer (CRC) is the third leading cause of cancer death. At the time of diagnosis 25% of patients present with stage IV disease and out of all CRC patients 50% develop liver metastases. About 15% of them have initially resectable disease. If possible, surgical resection is the best treatment option as it is associated with longer survival. Latvia Oncology center provide expertise in managment of all cancers, including metastatic CRC.

Patients and methods. Data about CRC patients with surgicaly treated liver metastases was colected and analysed from Latvia Oncology center in period 2011-2013. This data is also included in LiverMetSurvey international registry of patients operated for CRC liver metastases. Fifty six patients underwent hepatectomies with a slight predominance of female (n=30), 8 patients had 2 or more surgeries due to a reccurent disease.

Results. Together 64 surgeries were performed,out of which 26 were major hepatecomies and 38 were limited resections(< 3 Sg.). Sinchronous surgery for liver metastases and primary tumor were performed in 14 cases: 8 for left or sigmoid cancer, 5 for rigt colon cancer and 1 for rectal cancer. Initially resectable liver disease was found in 57 cases; 2 patients recieved preoperative chemotherapy to achieve resectability. Single metastasis was found in 27 cases with dominant size of 30-50 mm. Unilateral metastases were diagnosed in 49 cases while there were 15 cases of bilateral disease. Postoperative complications developed in 12 patients, 3 of those after sinchronous surgeries for primary tumor. In 7 cases complications developed after major anatomical right sided hemihepatectomy and in 5 cases after atypical resections. Most frequent hepatic complications were infected collection in hepatic loge (n=6), non infected collection (n=2) and biliary leak (n=3); all of those were successfully treated with percutaneous dreinage. There was no mortality. At the time of hepatectomy surgery was liver curative in 53 cases (82,81%) and globally curative in 46 cases (71,88%).

Conclusions. Hepatectomies due to CRC metastases were performed in 56 patients, most of them were females aged 50-70 years. Overall 64 hepatectomies were performed, mostly limited non anatomical resections. In majority of patients 1 or 2 metastases were diagnosed, usually localized unilaterally. Initally resectable were 89% of cases. Mass of postoperative complications developed after major hepatectomies, were liver related (infected and non infected collections) and successfully treated with minimally invasive procedures. Complication rate (15%) in Latvia Oncology center is comperable to other Europian centers.

CANCER PATIENTS' DISTRESS RESEARCH

Ula Luneviciute, Egidija Masteikiene

National Cancer Institute, Vilnius, Lithuania

Background. Distress of cancer patients often is left unnoticed and it induces various problems: it is harder for patients to adjust to the illness, the quality of life is poorer, it causes much distress for oncologists' team. 1 year before in VU Institute of Oncology the Distress Thermometer was started to use for all patients in the hospital.

Objective. To explore prevalence and specificities of distress of cancer patients' in the hospital.

Methods. Distress Thermometer (NCCN, 2005). The method consists of Likert type scale from 0 to 10 that assesses the strength of experienced distress, and problem list, that includes practical, family, emotional, spiritual and physical problem groups. Patients assesses the strength of experienced distress and marks the problems they confronted during the last week. Demographic characteristics and information about the illness were collected from the case histories.

Participants. There were 488 participants: 43% of men, 57% of women.

Results. The mean of all participants' distress score was 3,47 (SD = 2,47). 82% of participants marked from 0 to 5 scores, 18% of participants — from 6 to 10 scores. Statistically significant corellation between distress score and the number of problems was found (r = 0,43, p<0,01). Mean number of problems was 1,95 (SD = 2,60). The most frequent problems were anxiety (31,6%), fears (20,5%), fatigue (16,8%), nervousness (15,2%), etc. The mean score of women distress (4,07) was significantly higher that men (2,68) (p<0,001). Women marked significantly more problems in all their groups. The younger the participants, the higher was the distress (r = - 0,13, p< 0,01). Patients in surgical treatment experienced significantly higher distress (M=3,98) than patients in therapeutic treatment (M=2,51) (p<0,01). Patients in surgical treatment experienced more emotional problems (M=0,94) that patients in therapeutic treatment (M=0,63) (p<0,01).

Conclusions

1. 1/5 of participants evaluated experienced distress for 6 and more scores. The mean distress score of patients in VU Institute of Oncology was 3,47. The higher the score, the more problems.
2. Women experienced higher distress. The younger the patients, the higher the distress score and the more problems.
3. The mean distress score of patients' in surgical treatment was higher than in therapeutic treatment. Participants in surgical treatment marked more emotional problems than in therapeutic treatment.

IMPORTANCE OF PATIENT NUTRITIONAL STATUS EVALUATION BEFORE RADIATION TREATMENT

Genovaite Lusyte, Natalija Kuzmina, Mariana Baranovska

National Cancer Institute, Vilnius, Lithuania

Introduction. Patient nutrition is an important factor in the process of oncology patient treatment and nursing. Patient nutrition deficiency is observed in patients with head and neck, digestive tract, lung and other tumours.

Aim. Evaluation of patients' nutritional status before radiation treatment.

Methods. All the patients hospitalized in VUOI Oncological Radiotherapy Department within the period from June to August 2012 (in total 119 including 55 men and 64 women) were surveyed for evaluation of the nutritional status. Assessment was carried out with respect to four aspects stated in the questionnaire: 1. Patient's BMI (body mass index) 2. Loss of weight within recent three months 3. Nutritional changes during the last week 4. Emergency hospitalization.

Results. The survey involved patients with tumours in different locations. The survey results demonstrated that different degree nutritional deficiency was determined in 35,7 % of men, 25.6 % of women and elderly patients. Nutritional deficiency was more frequent among the patients with head and neck tumours - 62.5 % and lung tumours - 66.7 %. For evaluation of a patient's nutritional status a questionnaire was used. The main aspects of the questionnaire are as follows:

1. Changes in body weight (it is important to assess weight changes within the recent 6 months, to pay attention to the tendency towards weight changes). While calculating the body mass, it is important to refer to what part of weight ascites, edemas or tumours account for.
2. Dietary changes (changes in the patient's diet should be noted, reduction in the amount of food or decrease in food calorific content, whether a patient takes only liquid food or only high calorific liquids).
3. Digestive disorders (it can be nausea, vomiting, anorexia, diarrhoea) are considered to be clinically important if they appear every day for more than two weeks.
4. Evaluation of patient's functional status (measuring subcutaneous adipose tissue).

Recommendations:

1. Making use of dietician's consultations and prescribing liquid nutritional supplements for prevention of weight loss while applying specific chemotherapy and radiation treatment in order not to interrupt radiation treatment.
2. In case of necessity of supplementary nutrition of a patient, if it is possible, preference should be given to enteral nutrition.

Conclusions. Nutritional deficiency in patients is an important point in the process of oncology patient treatment and nursing spread approximately among 60% of patients with head and neck and lung cancer. The nutritional status of patients should be evaluated before each stage of cancer treatment with a view to guaranteeing proper usage of nutritional supplements what would improve the rate of survival and patients' life quality.

MEDULLARY THYROID CANCER – CASE REPORT

Rita Ambraziene, Rita Kupcinskaite-Noreikiene

Hospital of Lithuanian University of Health Sciences Kaunas Clinics, Kaunas, Lithuania

Introduction. Medullary thyroid carcinoma (MTC) is an uncommon malignancy (<1 % of all tumors) of the parafollicular C cells of the thyroid, with a propensity for early lymph node spread and distant metastasis. It is hereditary in approximately 25% of cases, involving specific point mutations of the RET proto-oncogene inherited in an autosomal dominant fashion. The most frequently in sporadic MTC are diagnosed in 47-49 years of age (5-6 decade). In phase III trial (ZETA) randomized patients with locally advanced or metastatic MTC were treated either Vandetenib or Placebo. In this study, there was a significant prolongation of progression free survival (PFS) in patients who received vandetanib compared with placebo, with a hazart ratio (HR) of 0,46 and an estimated 11-month prolongation of median PFS.

Objective. To describe the first case of sporadic MTC in Lithuania, which is successfully treated with vandetanib.

Patient and Methods. A 37-year-old-men Lithuanian presented with metastatic MTC, clinical and pathological was pT2N1M1, stage IVC by TNM classification, 7th edition. Multiple metastasis was confirmed in the liver. Three times were performed surgery: the first was primary tumor of thyroid removed, then lymph nodes of neck and 21 metastasis of liver were removed. When the patient was treated with the tyrosine kinase inhibitor vandetanib, rapid decrease in serum CEA and radiological metastasis in liver were observed.

Results. Mutations characteristic of hereditary MTC was not identified. The patient is already 18 months treated. From the start of treatment was achieved complete biochemical and partial radiological as measured by Response Evaluation Criteria in Solid Tumors (RECIST Version 1.0) response after three months, which is observed up to now. CEA is a normal range [N 0 - 5,8 ug/ml]. Radiological was observed metastasis in the Liver decreased by 81 %. The main adverse events as assessed by Common Terminology Criteria for Adverse Events (CTCAE Version 4.0) are diarrhea (AE I°) and Acne-like rash (AE I°).

Conclusion. We describe the first successful case of MTC in Lithuania treatment with vandetanib. PFS is not yet reached. Vandetanib and possibly other tyrosine kinase inhibitors may be a novel beneficial option in patients with MTC.

COLON CANCER CELL LINES OF DIFFERENT AGGRESSIVENESS VARY IN THEIR CANCER STEM CELL PROPERTIES

Agata Mlynska[1,2], Karolina Zilionyte[1,3], Vita Pasukoniene[1]

1 National Cancer Institute, Vilnius, Lithuania
2 Department of Biochemistry and Molecular Biology, Vilnius University, Vilnius, Lithuania
3 Department of Microbiology and Biotechnology, Vilnius University, Vilnius, Lithuania

Background. Tumor heterogeneity is shown to be related to clinical outcome in cancer patients. The concept of a small subset of cancer stem cells being responsible for tumor relapse and metastasis comes out as a promising strategy for targeted cancer therapy. However, cancer stem cells are not easy to identify and isolate.

Objective. The aim of this study was to determine the putative colon cancer stem cell subset in human colon cancer cell lines, which differ in their aggressiveness and differentiation capacity. Material and methods. We chose two cell lines, which represent different types of experimental colon cancer models: HCT116 is known to be a highly aggressive cell line with little differentiation capacity, whereas HT29 is less aggressive and has an intermediate capacity to differentiate. Flow cytometry was used to asses HCT116 and HT29 cell lines for the expression of stemness-associated surface markers CD24, CD44, CD117, CD133, ESA, ABCB1. Both cell lines were treated with 5-fluoruracil and the stemness phenotype of chemoresistant cells was investigated. Side population was visualized via Rhodamine 123 staining. HCT116 and HT29 cell lines were magnetically sorted based on their CD24, CD44 and CD133 expression. Relative expression of ABCG2, c-Myc and Oct4 genes was quantified using qPCR analysis in sorted cells subsets.

Results. HCT116 and HT129 differ in the expression of CD24, CD44 and CD133 surface markers. Chemoresistant cells do not express CD133 marker in both cell lines. We show that 1,6% of HCT116 and 1,2% of HT29 cells are able to actively pump out the Rhodamine 123 dye and account for side population. In addition, side population cells express less CD133 than the general population in both cell lines. After assessing the relative expression of cancer stem cell-associated genes in magnetically sorted cells, we found that in HCT116 cell line, CD24- cell subset was found to have an upregulated expression of c-Myc. ABCG2 and Oct4 were upregulated in CD44+ subpopulation. Increased expression of all investigated genes was detected in CD133- subset of HCT116 cell line. In HT29 cell line, ABCG2, c-Myc, and Oct4 were upregulated in CD24+, CD44- and CD133- subsets.

Conclusions. Our findings demonstrate that human colon cancer cell lines with distinct levels of aggressiveness and differentiation capacity differ in their cancer stem cell properties. We imply that putative cancer stem cell subset of highly aggressive HCT116 cell line possess CD44+/CD24-/CD133- phenotype (4,1% of all cells), whereas in less aggressive HT29 cell line cancer stem cell subset is characterized by CD24+/CD44-/CD133- phenotype (4,9% of all cells).

MEDULLARY THYROID CANCER – CASE REPORT

Rita Ambraziene, Rita Kupcinskaite-Noreikiene

Hospital of Lithuanian University of Health Sciences Kaunas Clinics, Kaunas, Lithuania

Background. Ovarian cancer remains the most lethal gynecologic malignancy. Early detection and clinical monitoring of ovarian cancer is of critical importance. No single biomarker can provide all the necessary information for ovarian cancer diagnosis and therapy. The identification and validation of novel multibiomarker panels may become a promising tool for everyday clinical practice. Since tumor microenvironment was shown to promote and enhance cancer progression, it is crucial to select relevant cellular and molecular markers which reliably reflect tumor-host interactions.

Objective. The aim of this study is to evaluate relationships between potential drug resistance, stemness and immunosuppressive markers in ovarian cancer patients.

Material and methods. For this study, 20 pathologically verified tumor specimens and peripheral blood samples were obtained from women with serous epithelial ovarian cancer. Flow cytometry was used to assess immunosuppressive T lymphocyte subsets in peripheral blood, to determine tumor leukocyte infiltration and to evaluate the expression of a panel of stemness-associated markers in tumor cells. Immunosuppressive enzymes in serum and tumor lysate were quantified by an ELISA method. The relative expression of a panel of platinum resistance-associated genes was quantified using real-time qPCR.

Results. The expression of all markers differs between patients. Several statistically significant ($p<0,05$) relationships were elucidated after applying correlation analysis. It was shown that the greater the quantity of immunosuppressive enzyme IDO in tumor lysate, the higher the expression of multidrug resistance proteins ABCC1 (R=0,91) and ABCG2 (R=0,74) in tumor cells. Also, expression of stemness-associated marker CD44 in tumor cells correlates with the relative expression of *FN1, ATP7B, ATP11B* gene set (R=0,69), tumor leukocyte infiltration (R=0,66) and serum IDO level (R=0,76). Additionally, serum IDO level is associated with *FN1, PCNA, ATP11B* gene set expression (R=0,74). Moreover, the size of the immunosuppressive T cell subset CD8+/CD57+/FoxP3+ correlates with the expression of *ASS, PCNA, ATP11B* gene set (R=0,89).

Conclusions. Our results reveal important patterns in the molecular profile of ovarian tumors. More thorough investigation of *CD44, FN1, PCNA, ATP7B, ATP11B, ASS* expression, IDO quantity and their relationships with clinical data could support the establishment of novel prognostic and predictive marker set for ovarian cancer.

NON-INVASIVE METHODS (HISTOSCANNING AND MULTIPARAMETRIC MRI) FOR DIAGNOSIS OF PROSTATE CANCER

Ieva Naruseviciute, Albertas Ulys, Ruta Briediene, Alvydas Vezelis, Ruta Grigienė, Mantas Trakymas

National Cancer Institute, Vilnius, Lithuania

Introduction. Prostate cancer is the most commonly diagnosed cancer among men and this is typically a disease found among older men. This is often a relatively slow growing cancer and then prostate cancer is diagnosed at the localized or regional stage, the 5-year survival rate approaches 100%. At the present the standard method of diagnosing prostate cancer is TRUS-guided biopsy. The radiological challenge is to provide an assessment of the clinically significant malignancy in prostate and surrounding tissue for increased accuracy before the diagnosis.

HistoScanning and multiparametric MRI. According to literature HistoScanning and multiparametric MRI (mpMRI) are two non-invasive methods used in clinical practice to determine the need for prostate biopsy and aid in biopsy planning. These two methods, may not only predict biopsy outcome but also aid in targeting biopsies by indicating suspicious areas in the prostate. Reducing the number of cores needed may determine decreasing local tissue trauma and complications, patients' pain and discomfort. Moreover knowledge of the location and size of tumours may be useful for treatment planning of a nerve-sparing radical prostatectomy.

Experience of Institute of Oncology Vilnius University (VUOI). In Lithuania HistoScanning introduced in Institute of Oncology Vilnius University from May 2013. Till 05/2014 HistoScanning was performed for 150 patients. 4 targeted biopsies using HistoScanning data were performed and one Gleason 7 (3+4) cancer was detected in patient with previously multiple negative biopsies. One clinical case presented. For this patient HistoScanning was performed using Prostate HistoScanningTM; multiparametric MRI (T2, DWI and DCE-MR sequences) was performed with 1,5T MRI and changes were appreciated using PI-RADS system.

Conclusion. The HistoScanning is promising method for clinically significant prostate cancer detection, but is still under research and need for further investigation.

RADIOSENSITIVITY OF CHONDROSARCOMAS: A CASE OF SPINAL CHONDROSARCOMA

Aista Plieskiene[1], Tomas Dauksas[2]

1 Klaipeda University Hospital, Klaipeda, Lithuania
2 Vilnius University, Vilnius, Lithuania

Chondrosarcomas are slow-growing, malignant mesenchymal tumours characterized by the formation of cartilage by the tumour cells, high-grade malignant lesions with aggressive local behavior and metastatic potential. Grade III lesions are more cellular and pleomorphic in appearance, with a marked increase in the number of mitotic figures. The rate of metastasis in grade III lesion is more than 70 %.

As chondrosarcomas grow slowly, with a relatively low fraction of dividing cells, and radiotherapy (RT) acts at dividing cells, chondrogenic tumors are considered relatively RT resistant. RT can be considered in two situations: after incomplete resection, aiming at maximal local control (curative), and in situations where resection is not feasible or would cause unacceptable morbidity (palliative). For curative intentions, doses >60 Gy are required to achieve local control. However, application of this dose with conventional high-energy photon RT is often impossible in the vicinity of critical (neurological) structures, especially in chondrosarcomas arising in the skeleton. In this situation, postoperative RT is often indicated because these tumors or metastases are less accessible for radical resection.

Case report: A 22-year-old man with disseminated paraspinal (VTh 4/5) chondrosarcoma was referred to Klaipeda university hospital in November 2011. There was no alternative to chemotherapy in heavily pretreated mesenchimal chondrosarcoma case.

Histopathological examination revealed chondrocytes in lacunae that were arranged in lobular patterns. Infiltration into the overlying mesenchymal tissue was visible. The tumour was diagnosed as high grade chondrosarcoma. Mediastinal lymphnodes was site of progression in 2011.

We started to combine palliative RT and possible surgical options to achieve the best outcomes in this disseminated paraspinal chondrosarcoma case. The patient was advised to undergo following treatment options for next 3 years:

Metastatic disease (Site of progression)	Date of dissease progression	Surgery	Radiation herapy: prescribed dose (Gy)	Results
Mediastinal lymphnodes	2011-11	–	50 Gy, 25 fr	Metastatic tumour reduction; Stable disease
Soft tissues of pelvis (m. obliqus abdominis major et minor)	2012-08	+	Post op. (R1) 56 Gy, 28 fr	Complete remission
Spinal canal (VL2-VL3)	2013-11	+	Post op. (R1) 45 Gy, 25 fr	Complete remission

There was no evidence of recurrence in any site of methastatic disease after RT, and the patient was continuing to receive routine follow-up at the time of writing.

Conclusions: disseminated not resectable chondrosarcomas, especially mesenchymal, which do not respond to the chemotherapy, may be considered for palliative RT with good local control results.

GLIOSARCOMA: A CASE REPORT

Aista Plieskiene[1], Alvydas Cesas[1], Tomas Daukšas[2]

1 Klaipeda University Hospital, Klaipeda, Lithuania
2 Vilnius University, Vilnius, Lithuania

Introduction. Gliosarcoma (GSM) is a primary tumor of the brain composed of neoplastic glial cells in association with spindle cell sarcomatous elements. The 2007 World Health Organization classification scheme places primary GSM as a grade 4 neoplasm and a variant of glioblastoma multiforme (GBM).

Case Report. A 61-year-old man presented to us with headache and epileptic seizures for the last 12 months. On neurological examination there were no deficits in sensory or motor functions. Magnetic resonance imaging (MRI) revealed a well-circumscribed lesion measuring 20/22/21 mm in the right temporal lobe, which was hypointensive on T1, hyperintensive on T2, was irregularly enhancing with contrast and had minimal evidence of mass effect.

The patient was operated; right temporal craniotomy with radical decompression of tumor was performed. Postoperatively, the patient had no added deficits, was relieved of headache, no epileptic activity was observed. Postoperative CT imaging was done – no signs of postoperative bleeding observed. Histologically, the tumor showed heterogenous morphology with areas composed of polygonal to irregular-shaped, giant tumor cells with moderate to abundant eosinophilic cytoplasm in a background of neurofibrillary. A special stain for reticulin showed focal presence of intratumoral fine to coarse reticulin fibers. Large zones of undifferentiated clonal tumor with higher mitotic activity, blood vessel proliferation, pseudopalisadic necroses were seen. On immunohistochemistry, the tumor was focally positive for glial fibrillary acidic protein [GFAP], negative for panCK, synaptophysin, HMB-45. It showed high Ki-67 labeling index of 40%. A diagnosis of GBM was made.

The patient was then referred to our department and underwent a post-operative radiotherapy treatment receiving a total dose of 60 Gy in 30 fractions (2 Gy per fraction) with concurrent and adjuvant temozolomide therapy. Ten months after the radiotherapy had been administered, the patient developed a severe headache, generalized seizures that caused loss of consciousness, left leg and foot numbness. Brain MRI showed a right temporal lesion measuring 20/34/28 mm. Total surgical excision was undertaken and a diagnosis of giant cell glioblastoma was made.

Conclusions. PGS represents a clinically challenging group of tumors, due to its rarity, poor prognosis, and the limited experience in published literature. Many of its clinical and pathogenetic characteristics remain to be revealed, and there is much room for future studies focusing on these biphasic tumors. The current reported literature does provide a number of distinguishing clinical and pathogenetic features of PGS to suggest they are indeed separate entities from GBMs. These differences include gliosarcomas' temporal lobe predilection, their potential to appear similar to a meningioma grossly at operation, their increased metastatic potential, and the infrequency of EGFR mutation.

Despite the good localization and surgical resectability of the gliosarcoma, the multiple – modality therapies available today, the prognosis for patients is still poor because of a high rate of recurrence.

POSTGRADUATE CANCER EDUCATION AND TRAINING IN LITHUANIA: HARMONIZATION ACCORDING TO THE EU RULES

Vydmantas Atkocius, Ramune Mineikyte, Ernestas Janulionis, Narimantas Evaldas Samalavicius, Jurgita Liutkeviciute-Navickiene

National Cancer Institute, Vilnius, Lithuania

In Lithuania, cancer morbidity is growing constantly. The main players in the treatment of oncological diseases are medical, radiation and surgical oncologists, so, in order to assure the quality of cancer treatment, we have to educate and train highly qualified health care professionals at postgraduate level.

In Lithuania, a specialization in an area called clinical oncology is absent; as independent specialties in oncology, there are both medical oncologists and radiation oncologists. These types of oncologists complete rigorous residency training in the clinics. Separate courses are provided in different residency bases for the 1st and 2nd year residents. Currently, there are two Medical Oncology and Radiation Oncology clinical bases for 3rd, 4th and 5th year residents, one at the National Cancer Institute and another at the Lithuanian University of Health Sciences and Kaunas Clinics.

Today there are only 45 radiation oncologists and 56 medical oncologists licensed in Lithuania. This means that each radiation oncologist and medical oncologist is providing for 397 and 319 new cancer cases per year, respectively; or there are 0.3 practicing in the major specialties of oncology per 10 000 population.

Most other medical residency programs expose their trainees to oncology for only 1 month either in the 1st or 2nd year of residency. These programs have to be extended, especially for family physicians and internal medicine residents.

In Lithuania, postgraduate cancer education programmes are implemented according to EU recommendations, and are in the process of harmonization according to the EU rules. All the Lithuanian residency programs are certificated by an independent public agency and are recognized by a number of countries, including all the countries of the EU.

METHYLENE BLUE *EX VIVO* STAINING OF RESECTED COLORECTAL CANCER SPECIMENS TO ENHANCE LYMPH NODE RETRIEVAL – RANDOMIZED CONTROLLED TRIAL

Heigo Reima[1], Helgi Saar[2], Jaan Soplepmann[1]

1 Tartu University Hospital Haematology and Oncology Clinic, Estonia
2 Tartu University Hospital Department of Pathology, Estonia

Aim. Metastatic involvement of regional lymph nodes is a major prognostic factor in colorectal cancer influencing also treatment strategy. International consensus standard is retrieval of at least 12 lymph nodes from resected colorectal specimens. The aim of present study is to assess the effect of colorectal specimen staining with intraarterial methylene blue injection to lymph node yield.

Materials and methods. 160 radically operated colorectal cancer patients were randomized to methylene blue staining and control grups. 15ml of methylene blue dye was injected intraarterially in operating room after specimen removal. After formalin fixation colorectal specimens were analysed for lymph node count, diameter and metastatic involvement.

Results. There was significant difference in number of lymph nodes retrieved. Mean number of lymph nodes was 21 (95% CI 17-24) in non-stained and 30 (95% CI 27-34%) in stained groups respectively ($p<0,001$). In stained group more small diameter lymph nodes were examined. There was no significant difference in examination of 12 and more lymph nodes (89% in stained and 81% in non-stained groups respectively). There was also no significant difference in metastatic lymph node involvement (42% in stained and 40% in non-stained groups respectively).

Conclusions. Methylene blue staining is a simple procedure significantly improving lymph node yield.

NEOADJUVANT PHYTOTHERAPY – PRELUDE TO CRYOEXCISION OF CLINICALLY ATYPICAL NEVUS

Juozas Prusinskas, Agne Prusinskaite

"Apgamas", Vilnius, Lithuania

Introduction. Nevus is a congenital malformation of the epithelium, it's a storage of the potentially dangerous cells – melanocytes that arise in the embryonic age from neural crest and tend to neoplastic transformation. They can appear immediately at birth (quick) or later in life (belated). Congenital are carrying genetical information about the state of hereditary diseases in the several generations and it depends on the position on the meridian.

Purpose. Usually nevi regard a cosmetic defect which in most cases don't cause any problem. But doctors are well aware what kind of risk they may increase. It is estimated that in 80% of cases melanoma - an extremely aggressive malignant tumour with the unpredictable course of disease - develops exactly from atypical nevi. Every nevus from melanoma separates just a very tiny line. Also noted that the current skin malignancies are strongly transform. It causes growing concern among doctors. In recent years a growing trend to remove all atypical skin lesions has arisen.We also remove all atypical nevi. It is important to emphasize that we choose the cryosurgical method, because this is the only method of nevus removal that prevents tumour cells from dispersing during tumour excision.

Methodology. We take into account our practical experience, experience of our colleagues and scientific opinion when developing a treatment plan and we think that every change of the nevus is a signal of a neoplastic shift in human melanocytic system.The timely removal of the nevus is the prevention of a melanoma. Therefore we have the same point of view to the removal of atypical nevi as to the treatment of the primary skin melanoma and it is complex. Treatment is carried out using our methodology and depends on the complexity of and location of a pathological area. Just before the surgery the patient receive a phytotherapy periwinkle (Vinca minor L) treatment. Usage of the periwinkle in the neoadjuvant mode has a multi-pronged action on the patient´s organism. Visually has been found to devitalize the tumour, reduce its volume and reduce the size of aggressive zones. Almost all patients have improved the state of their emotional wellness, lower level of depression and they start to believe that the treatment will be successful. This is especially important before the next step of the treatment – freezing and excision of the pathological area. Freezing is performed by standardized method and removal of the frozen area is performed applying the authorized method with a annular scalpel. Annular excision of the frozen hearth is one of the elements of our way to treat the pigmented lesions of the skin. This method was developed by Juozas Prusinskas and was approved by the Research Institute of Oncology in 1980. It was introduced into the practical work of the centre „Apgamas"in 1992.When planning a treatment strategy, atypical skin pathology we see as signals of systemic disease. However we believe that before starting treatment a significant part of patients has microme tastases and circulating tumour cells which are not detectable by the modern visualization methods. Our experience has shown that the technique of removing the frozen volume significantly effects the quality of the operations.

Conclusions. Using a annular scalpel to remove frozen hearth allows to reduce the area of excision and greatly reduce the time of surgery, surgical wound needs no suturing, it heals through granulation, operation does not require anaesthesia and there are no local recidives. It minimizes the risk of dispersal of tumour cells in the body and the possibility of general intoxication. Healing occurs gentle and cosmetically acceptable. And last but not least, our method of cryoexcision allows visually identify the morphological atypia in nevi.

THE IMPACT OF SINGLE NUCLEOTIDE POLYMORPHISMS OF INTERLEUKINS ON PAIN RELIEF IN THE RADIOTHERAPY TREATMENT OF PAINFUL BONE DESTRUCTIONS DUE TO MULTIPLE MYELOMA

Milda Rudzianskiene, Arturas Inciura, Elona Juozaityte, Rasa Ugenskiene, Dauguole Raulinaityte, Viktoras Rudzianskas

Oncology Institute of Lithuanian Health Sciences, Kaunas, Lithuania

Background. Multiple myeloma (MM) cells interact with bone marrow stromal cells stimulating secretion of proinflammatory cytokines like IL-6 and IL-10, which are implicated in the progression of MM and also in the pain pathogenesis. Cytokines could be hypothesized to function as pain modulators as peripheral nociceptors are sensitized by proinflammatory cytokines. Regulation of cytokines secretion is under genetic control through genetic polymorphisms.

Aim. To determine if the single nucleotide polymorphism (SNP) of IL-6 and IL-10 cytokines could influence the analgesic response of radiotherapy in the treatment of MM patients.

Methods. 30 patients (19 women and 11 men, median age: 67 years) were enrolled in the study. Pain was evaluated according to the visual analogue scale with score endpoints ranging from 0 (no pain at all) to 10 (worst imaginable pain). Pain score and analgesics usage were measured prior to radiotherapy as well as 4, 12 and 24 weeks afterward. Opioid analgesics were converted to the morphine-equivalent daily dose (MEDD). Genomic DNA was extracted from peripheral blood leukocytes and IL-6 and IL-10 gene promoter SNP were analyzed with polymerase chain reaction-restriction.

Results. 60% (18/30) of the patients reported severe pain prior to radiotherapy, which decreased to 13% (4/30) at the first follow up visit ($p < 0.001$). MEDD at the admission was 75 mg/day (range 10 – 260 mg/day) which decreased to 46 mg/day (range 0 – 140 mg/day) at the first follow up visit ($p = 0.033$). A significant parameter in pain relief was: age < 65 years ($p=0.029$). We analyzed 6 SNPs and their association with pain severity and analgesic consumption. Patients who are IL10 -1082A/G carriers are prone to respond better to radiotherapy ($p<0.05$).Due to the small sample size we did not find significant relations, but there was a borderline association for patients who are IL6 -597A/A and G/G carriers assumed to be at higher risk for severe pain prior to radiotherapy ($p=0.07$) while for patients who are IL10 -1082A/A carries: the median pain score decreased faster ($p=0.08$). Patients with genotypes IL6 -597A/A and IL6 -174C/C required a smaller dose of opioids ($p=0.06$).

Conclusion. SNP of IL-6 and IL-10 cytokines can influence the analgesic response of radiotherapy. Patients with genotype IL-10 -1082A/G respond better to radiotherapy.

DISTRIBUTION AND CLINICOPATHOLOGICAL FEATURES OF BREAST CANCER HISTOLOGICAL SUBTYPES IN LATVIA

Andrejs Srebnijs[1,3], Sergejs Isajevs[2,3], Mihails Timofejevs[1], Viesturs Krumins[1], Janis Eglitis[1,3], Juris Berzins[3], Uldis Vikmanis[3]

1 Riga East University Hospital, Latvian Oncology Centre, Riga, Latvia
2 Riga East University Hospital, Centre of Pathology, Riga, Latvia
3 Faculty of Medicine, University of Latvia, Riga, Latvia

Background and objectives. Breast cancer is heterogenous disease. It consists of several histological subtypes which can be separated by morphology and immunohistochemistry.

The aim of our study was to analyse the distribution of breast cancer histological and molecular subtypes, and their relationship with clinical and pathological characteristics in Latvia.

Patients and methods. 561 patients, who underwent breast carcinoma surgical treatment from January 2003 till December 2012 and had full histological and immunohistochemistry information were enrolled in the study.

Results. In total, *invasive ductal carcinomas not otherwise specified* (IDC-NOS) or of *invasive ductal carcinomas no special type* (IDC-NST) was observed in 430 patients (76.65 % of cases), medullar carcinoma in 14 patients (2.45%), other rare ductal carcinoma subtypes in 13 patients (2.31%), lobular carcinoma in 81 patients (14.4%) and tubulolobular carcinoma was observed in 23 patients (4.19%).

Ductal carcinoma, lobular and tubulolobular carcinoma had predominantly luminal A and B subtype, whereas medullar carcinoma had HER2- positive and triple-negative (TN) subtype. However, tubular, cribriform, mucinous, papillary, apocrine carcinomas had predominantly luminal A subtype.

Conclusions. The relationship between the breast cancer histological and molecular subtypes was demonstrated. Significant differences between breast cancer histological subtypes and clinicopathological characteristics were observed. In addition the different distribution of the breast cancer histological and molecular subtypes compared to other countries was demonstrated.

Keywords: breast cancer, histologycal subtypes, molecular subtypes

DISTRIBUTION AND CLINICOPATHOLOGICAL FEATURES OF BREAST CANCER MOLECULAR SUBTYPES AT LATVIAN ONCOLOGY CENTER

Andrejs Srebnijs[1,3], Sergejs Isajevs[2,3], Janis Eglitis[1,3], Mihails Timofejevs[1],Viesturs Krumins[1], Janis Eglītis[1,3], Juris Berzins[3], Uldis Vikmanis[3], Uldis Vikmanis[3]

1 Riga East University Hospital, Latvian Oncology Centre, Riga, Latvia
2 Riga East University Hospital, Centre of Pathology, Riga, Latvia
3 Faculty of Medicine, University of Latvia, Riga, Latvia

Background and objectives. Analysis of gene and protein expression arrays has resulted in the recognition of several fundamentally different subtypes of breast cancer. The aim of our study was analyse the distribution and clinicopathological features of the breast cancer intrinsic subtypes among patients undergoing surgical treatment in Latvian Oncology Center.

Material and methods. 588 patients aged 27 to 89 years who underwent breast cancer surgical treatment from January 1, 2003 to December 31, 2012 in Latvian Oncology Centre of Riga East University Hospital and had full immunohistochemistry information, were included in the study.

Results. In total, luminal A subtype was observed in 37.75 % of cases, luminal B in 38.94%, HER2 in 7.99%, but triple negative (TN) in 15.32 %. The marked differences in clinicopathological characteristics were observed between molecular subtypes. Patients with HER2 subtype had the greatest median tumour size, whereas the rate of sentinel lymph node (SN) positivity was significantly higher in the TN compared to HER2 subtype. A positive correlation between tumour size and disease stage was observed only for TN subtype. Furthermore, a correlation between tumour size and grade was observed only for luminal a subtype.

Conclusions. Our study reports the distribution and characteristics of breast cancer intrinsic subtypes in patients undergoing surgical treatment in Latvian Oncology Center. The molecular subtype correlated with tumour behaviour and clinicopathological characteristics.

Keywords: breast cancer, intrinsic subtypes, immunohistochemistry

DOES THE MOLECULAR SUBTYPE OF TUMOR AFFECTS THE TYPE OF SURGERY IN BREAST CANCER PATIENTS?

Andrejs Srebnijs[1,2], Sergejs Isajevs[2,3], Mihails Timofejevs[1], Jānis Eglītis[1,2], Viesturs Krūmiņš[1], Juris Bērziņš[2], Uldis Vikmanis[2]

1 Latvian Oncology Centre of Riga East Clinical University Hospital, Riga, Latvia
2 Medical Faculty of Latvian University, Riga, Latvia
3 Patology centre of Riga East Clinical University Hospital, Riga, Latvia

Introduction. Breast cancer (BC) is a heterogenous disease. There are several molecular subtypes (MS) of BC found. The use of MS for the planning of adjuvant and neoadjuvant treatment of BC is common, though the accesible literature concerning the link between MS of BC and the type of surgery is still lacking.

The aim of the study. Our aim was to learn the link between the long-term results of different types of surgery – i.e. radical mastectomy (RME) or breast conserving surgery (BCS) and various MS of BC.

Materials and Methods. The retrospective study involves 495 patients with BC afer surgery in Latvian Oncology Centre from January 1st 2004 till December 31st 2011. Luminal A subtype was found in 189 patients, 195 patients had luminal B subtype, 41 patients were HER2 positive and 73 pacients had tripple negative (TN) status. The statistical analysis of the long term results in the treatment of all MS groups of BC was performed in general. The result of every type of surgical modality (RME or BCS) in each MS was statistically analysed as well. SPSS Statistics 20.0 software was used for the mentioned calculations.

Results. Our study showed, that overall survival (OS) as well as desease free survival (DFS) depends on MS of BC, and patients with TN subtype have the lowest OS and DFS. 5 year survival depending on the type of surgery was evaluated and it was found to be higher in patients after BCS than after RME ($p<0,0001$). OS and DFS is higher in patients after BCS comparing with those after RME in luminal A and B groups, but does not differ in HER2 and TN group patients. No statistical difference was found in OS and DFS in any MS group of patients with I or II stage BC disease after various types of surgery. Stage III BC patients in luminal A and B subtype group showed better 5 year survival after BCS than RME ($p<0,0001$), when HER2 and TN subtype group had no such pattern.

Conclusions. Despite the fact that the MS of BC is a major prognostic value for postoperative results, the type of surgery does not effect the prognosis of any subtype of BC. BCS is associated with a better outcome in luminal A nad B group patients, although HER2 and TN group patients after BCS and RME have comparable prognosis. The study hereby shows that MS of BC does not effect the choice of surgery, and only surgical or general indications should be taken into account when choosing between BCS or RME.

FUNCTIONAL LUNG PERFUSION SPECT IMAGING FOR LUNG-CONSERVING RADIOTHERAPY

Marius Stalnionis, Rita Steponaviciene, Romualdas Griskevicius, Jonas Venius

National Cancer Institute, Vilnius, Lithuania

Introduction. Lung cancer is one of the most common oncological diseases worldwide. One of the possible treatments for lung cancer is Radiation Therapy. Functional imaging and its application to radiotherapy (RT) is a rapidly expanding field with new modalities and techniques constantly developing and evolving. During the process of radiation therapy planning, it is commonly accepted to treat the lung area as a homogenous organ without evaluation of lung function in different lung segments. Although, some of the lung cancer patients do possesses a non-uniform lung perfusion. Lung function requires both perfusion and ventilation of alveoli. Perfusion imagining is clinically relevant to lung function because ventilation without perfusion is more common than perfusion without ventilation. Single photon emission tomography (SPECT) using technetium-99m labeled macro-aggregated albumin can be one of the possible solutions for evaluation of lung perfusion before the radiation therapy and help to modify the definitive radiation therapy planning according to the nuclear medicine 3D functional images.

Aim. One of the reasons and additional value of lung perfusion SPECT for radiotherapy is the possibility to avoid irradiating lung segment with relatively better perfusion and increasing the dose to the tumour through the lung segment of worse or no perfusion, thus optimizing the treatment, preserving the healthier lung tissue and ensuring better overall lung function after the treatment.

Methods. Using multimodality imaging workstation, images acquired with SPECT and CT were fused to add precision for contouring areas that will receive irradiation.

Results. On the other hand SPECT can also be useful when evaluating possible side effects to the lung tissue from the radiation therapy. The complications usually occur within 1-3 months after the completion of the treatment and chronic radiation fibrosis can develop over the period of 2 years. Lung SPECT would be a method of choice to effectively diagnose radiation fibrosis with possibility to quantify relative perfusion according to the quantified nuclear medicine images. It has been reported in the literature, that after modifying the radiotherapy plan with SPECT data, it is possible to reduce the area of the healthy lung which receives a dose of more than 20 Gy by a 30 %.

Conclusion. By using multimodality and multidisciplinary approach in radiation therapy the treatment can be optimized to reduce the radiation dose to the patient while achieving the favorable therapeutic result and minimizing the post-treatment side effects. Of course, there are cases where such approach can be most efficient and cases where it would gain no benefit. Once again, emphasizing the importance of treating each case by the team of radiotherapists, radiologists, nuclear medicine physicians, pulmonologists and medical physicists.

INCORPORATION OF BONE SPECT INTO RADIOTHERAPY FOR PRECISE TARGETING OF BONE METASTASES

Marius Stalnionis, Rita Steponaviciene, Romualdas Griskevicius, Jonas Venius

National Cancer Institute, Vilnius, Lithuania

Introduction. Bone scan is a nuclear medicine imaging method for which a radioactive technetium-99m labeled phosphate compound which is taken up by a regenerating bone tissue. The scan is used to help diagnose the bone metastasis and can provide quantitative information on the activity of the possible lesion. Skeletal scintigraphy remains the most commonly used diagnostic imaging modality for the evaluation of skeletal metastases. Newer imaging modalities such as 18F-Na PET and whole-body MRI are not routinely available, but they may be more widely used in the future. Such information could complement the radiation therapy treatment if incorporated into the planning system for the therapy. This is possible to achieve using multimodality imaging workstations dedicated for radiation therapy planning and avoid overcontouring or missing out lesions on CT, without functional information.

Aim. After the successful integration of SPECT images it becomes possible to reduce the margin added to metastasis, because metastasis is already localized in SPECT diagnostic images. Result of this successful implementation would give new possibilities for metastasis treatment, more precise by higher doses and ability to reduce toxicity for oligometastatic disease (palliative) patients. Oligometastases of bone have been reported in prostate and breast cancer. Overall high-dose radiotherapy provides long-term relief of pain and can even improve overall survival. The most favourable prognostic factor for breast oligometastatic patients are metastases only involving bone. This indicated high-dose radiotherapy for bone metastases could contribute to patients' survival.

Methods. A joint team of radiotherapists, nuclear medicine physicians and medical physicists discussed each case individually based upon all gathered information. For the comparison of the contouring of the metastasis, two metastasis contours were generated: one using SPECT data and one without.

Results. The difference in the size of the target is noticeable 277 cm3 versus 120 cm3. That is because following regular rules of metastasis treatment, after diagnosis from SPECT images, radiotherapist anatomically identifies location of metastasis in bone and adds additional margin. Also the overall dose to the CT imaged part of the patient (about 1/4 of the whole body) was reduced from 5.72 Gy to 4.1 Gy (by nearly 30%), when using SPECT.

Conclusion. Co-registration of SPECT and CT images was feasible, allowing delineation of the most active sites. SPECT-guided RT planning is a feasible and straightforward approach to optimize bone metastasis radiotherapy. The question remains whether that precision translate into improved clinical outcomes. Clearly, this question can only be answered in a prospective clinical trial.

RISK FACTORS OF BREAST CANCER: A CASE-CONTROL STUDY

L. Strumylaitė, R. Kregzdyte, R. Norkute

Neuroscience Institute, Lithuanian University of Health Sciences, Kaunas, Lithuania

Background. Breast cancer is the most frequently diagnosed cancer and the leading cause of cancer death among women worldwide. The study aimed to examine potential risk factors of breast cancer.

Methods. A hospital-based case-control study was carried out in 585 cases and 1170 age-matched controls. Information on socioeconomic status, reproduction life, and lifestyle factors was collect via a structured questionnaire. Multivariable conditional logistic regression analysis was used to calculate odds ratio (OR) and corresponding 95% confidence intervals (CI).

Results. Women with some university or higher education exhibited 34% increased risk of developing breast cancer compared to those with lower education (OR=1.34, 95% CI=1.07-1.69) after adjustment for number of given births, age at first birth, estrogen-active period, hormone therapy during menopause, family history on breast cancer, alcohol use, smoking, body mass index, marital status, diabetes mellitus, and thyroid diseases. Greater risk of breast cancer was associated with longer estrogen-active period (OR=1.07, 95% CI=1.04-1.09), use of hormone therapy during menopause (OR=2.16, 95% CI=1.18-3.93) after adjustment for confounders. Alcohol users experienced 1.8 times higher risk of breast cancer compared with nonusers and /or ex-users (OR=1.79, 95% CI=1.34-2.39) after adjustment for confounders. Current smokers exhibited 1.4 times breast cancer risk of never smokers (OR=1.44, 95% CI=1.01-2.06). However, thyroid diseases and diabetes mellitus in disease history reduced risk of developing breast cancer (OR=0.7, 95% CI=0.54-0.9 and OR=0.64, 95% CI=0.42-0.99, respectively).

Conclusion. The data obtained show that higher education, longer estrogen-active period, use of hormone therapy during menopause, alcohol consumption and smoking are related to increased risk of breast cancer; however thyroid diseases and diabetes mellitus in the past decreases the risk of the disease.

INTERACTION OF HPV AND GENES POLYMORPHISMS IN BREAST AND LUNG CANCEROGENESIS

Stumbryte Ausra[1,2], Gudleviciene Zivile[1,3], Jankauskaite Elona Airolita[1,2], Mazul Justyna[2]

1 National Cancer Institute, Vilnius, Lithuania
2 Vilnius University, Faculty of Natural Sciences, Lithuania
3Vilnius University, Faculty of Medicine, Lithuania

Introduction. Human papillomavirus (HPV) is known as one of the main causes of cervical cancer, which is also involved in the other processes of cancerogenesis. Usually HPV is sexually transmitted; however it might spread in hematogenous manner and infect lung and breast tissues. Controversial interaction between genes involved in cancerogenesis (*TP53, MDM2, MDM4*) polymorphism and HPV infection was published. Even though it is believed that HPV infection may predetermine specific response to therapy in cancer patients, but there is a lack of experimentally proven data about HPV-infected tissue susceptibility to therapy or outcome. Therefore, more of scientific research oriented on association of patient's genetic predisposition and susceptibility or outcome of cancer therapy is needed.

Methods. The main goal of our study is to identify predictive and prognostic viral-genetic factors for selection of cancer patient's treatment and follow-up. Patients with lung and breast tumors were involved in this study. HPV detection, HPV typing and association with *TP53, MDM2, MDM4* gene polymorphisms was analysed. Gene expression changes are being assessed using PCR and restriction analysis.

Results. Our results show that women with breast cancer more frequently have arginine/proline (Arg/Pro) allelic variant at the 72nd codone of TP53 gene exon 4 (69%), while Arg/Arg allelic variant was found more rarely (31%). The same Arg/Pro allelic variant in patients with lung cancer was found to be even more prevalent (96%), meanwhile Pro/Pro allelic variant was found only once (4%).

Thymine/guanine (T/G) polymorphic variant at the 309th position of *MDM2* intron 1 was found in 63% of investigated women with breast cancer, while T/T variant was found more rarely (37%). In patients with lung cancer T/T polymorphic variant at the 309th position of *MDM2* intron 1 was found to be predominant (58%), T/G polymorphic variant occurred more rarely (33%) and G/G variant was found only twice (8%).

Conclusions. The analysis of gene polymorphisms could be used for monitoring to predict cancer progression, recurrence risk and survival rates according to molecular, genetic and clinical indexes.

UNUSUAL CASES OF LONG UNTREATED SKIN AND SOFT TISSUE CANCERS: BUSCHKE-LOWENSTEIN TUMOR

Jüri Teras, MD, Marina Teras MD

North Estonian Medical Centre Foundation, Tallinn University of Technology, Estonia

Introduction and objectives. Untreated and abandoned skin and soft tissue cancer (SSTC) cases are rear in modern society but can be devastating and unbearable for both patients and their relatives due to clinical, emotional and social factors.

We report a study of several cases of long untreated skin and soft tissue cancer cases and show common paterns of patient, with no history of mental illness, behaviour.

Patients and Methods. In North Estonia Medical Centre Foundation Melanoma and Skin Cancer Unit 3 cases of huge (more than 10cm in diameter) squamous cell carcinoma (SCC) were treated from jan 2010 to dec 2013. Median enrollment age was 57 years (range 36 to 70 years). All patients were single and living alone at the time of presentation to the hospital and had had the lesion for several years (range 5 to 10 years).

Wide excision was performed in all cases with neoadjuvant radiotherapy performed in 1 patient. Exclusion criteria for neoadjuvant radiochemotherapy were the dimensions of tumors.

Results. Mortality in the operated group was 0%, morbidity due to short term post-operative complications was high. Most common complication was woundinfection (100%), that was treated with antibiotics according to wound cultrures.

One year overall and disease-free survival rates were both 100%. Median followup was 29 months (range 3 to 70 months).

A histopathologic evaluation of the tumor was performed in all cases with result of well-differentiated squamous cell carcinoma.

No patients with unusually devastating SSTC were diagnosed with mental disoders.

Discussion. Conclusions. Slowgrowing SCC of genitoanal area or Buschke-Lowenstein tumor is locally invasive and can be visually unberable and hard to tolerate for both patients and their next of kin, but overcoming patients reluctance for seeking medical aid can be challenging. Exophytic, fungating masses with cauiliflower-like moprhology are usually with low-grade mailgnancy. Surgical treatment ± radiochemotherapy give good local controll of the disease with sufficient recurrence free rate.

ISOLATED LIMB INFUSION FOR IN-TRANSIT METASTATIC MELANOMA. FIRST EXPERIENCE IN ESTONIA

Jüri Teras, MD, Marina Teras MD

North Estonian Medical Centre Foundation, Tallinn University of Technology, Estonia

Introduction and objectives. Melanoma is a widespread disease throughout the world. As many as 10% of advanced melanoma patients develop in-transit metastases – spreading of the metastases between the primary tumor and the nearest lymph node. The origin of in-transit metastases (ITM) is associated with the thickness of the primary tumor as well as the presence of lymphovascular invasion, although the exact underlying cause is to date unclear.

Objectives of this study is to follow the patients treated with Isolated Limb Infusion (ILI) in Estonia.

Methods. The North Estonia Medical Centre initiated ILI program at the end of 2012, being the only centre performing the procedure in Estonia.

Between November 2012 and November 2013 10 ILI procedures were performed on ITM melanoma patients. One procedure was performed for all patients and all cases were unilateral processes. All patients but one were female, the average age of the patients during the procedure was 72.6 years (59-81). The removal of the primary tumor occurred on average 2.4 years prior. For each of the patients the metastases were found on the lower limbs and in every case ITMs had been surgically removed from the thighs or feet.

Results. Overall response (OR) rate of 80% was recorded, complete response (CR) was achieved in 33% of patients, 45% of patients developed partial response (PR). The average follow-up period was 6 months during which none of the patients experienced new metastases emerge. None of the patients died during the follow-up period. All patients experienced side effects the multitude of which were Grade II (Widerdink toxicity gradation). The most frequent side effect was erythema and swelling of the limb. No limb amputations were performed as a consequence of the side effects.

Discussion. Conclusions. ILI procedure is well tolerated by the patients and with satisfactory treatment outcomes performable also in Estonia. Notwithstanding the inconsequential patient sample, the primary treatment outcomes are comparable to those of large medical centres and patients in Estonia with in-transit metastases have the option allowing for confined treatment.

THE IMPACT OF 18FDG PET/CT FOR ASSESSING THE SPREAD OF NON-SMALL- CELL LUNG CANCER

Paulius Jarusevicius

Lithuanian University of Health Sciences

Introduction. Lung cancer is the second most common cancer among men in Lithuania (2). There are two histological types of lung cancer – small-cell lung carcinoma (SCLC) and non-small-cell lung carcinoma (NSCLC). NSCLC amounts to 80% of all lung cancer cases. In 2012 Lithuanian University of Health Sciences (LUHS) Radiology department started to perform Positron emission tomography-computed tomography (PET/CT). This method is more accurate (1) in evaluating lymph nodes and distant metastasis compared to computer tomography (CT) alone.

Purpose. To evaluate the accuracy in staging of NSCLC using PET/CT with 18FDG compared with CT alone.

Object. To analyze and compare the difference of PET/CT and CT in: 1) The size of primary tumor; 2) The state of regional nodes; 3) Assessment of distant metastasis.

Calculate the percentage of patients, whose lung cancer stage was altered after PET/CT procedure.

Methods. This was a retrospective analysis of 78 patients with NSCLC. PET/CT was performed before radical treatment. PET/CT was used together with radiofarmaceutical Eckert & Ziegler Fluorodeoxyglucose (18FDG). Each patient, depending on weight, was injected with 323.72± 40.396 MBq of 18FDG. PET/CT scan was performed with GE Discovery VCL scanner 60.31 ± 6.329 minutes after the injection of 18FDG. Every patient prior to PET/CT scan was staged according to the data of multi-layer CT with intravenous contrast. CT data was used to evaluate the size of primary lung tumor, pathological node (those whose short axis is more then 1cm) stations. The stage of tumor was classified using The TNM Classification of Malignant Tumours, 7th Edition. After PET/CT test the following data was compared with CT:

1. The area of metabolically active zone in PET/CT with the area of consolidation in CT.
2. Metabolically active nodes. Nodes were considered pathological if their uptake of 18FDG is greater than 2.5SUV_{max} or greater than normal uptake of the mediastinum. Cases with metabolically active nodes due to inflammation were not analysed in this research.
3. Assessment of distant metastasis in full body scans.

Stage of NSCLC after PET/CT was composed based on the size of the tumor, spread to the nodes and possible distant metastasis. This stage was compared to the clinical stage, which was made after CT scan. 4 patients with *Carcinoma in situ* were not included in data analysis. Statistical analysis was made with IBM SPSS Statistics 20. Statistical significance was tested using McNemar's test with significance level of 95% ($p<0.05$).

Results.

1. After PET/CT out of 74 (100%) cases in 24 (32.4%) there was no difference in the area of metabolically active zone (PET/CT) and consolidation zone (CT). In 7 (9.5%) PET/CT showed a larger area, in 37 (50%) the area was smaller ($p=0.039$). The difference in size could not be assessed for 6 (8.1%) patients.
2. In 44 (59.5%) cases metabolically active nodes in PET/CT scan were the same as pathological nodes in CT. In 17 (23%) cases there were more metabolically active nodes in PET/CT and in 12 (16.2%) cases less ($p=0.088$). Metabolically active nodes were not assessed for 1 (1.4%) patient.
3. After PET/CT test distant metastasis were found for 8 (10.8%) patients ($p=0.07$).
4. The stage of NSCLC after PET/CT was altered for 40 (54%) patients – 20 (27%) stages were increased and 20 (27%) decreased. There was no change in staging for 27 (36.5%) cases.

Conclusion.

1. PET/CT test showed a statistically significant diffence ($p<0.05$) in assessing the size of primary tumor. In half cases the tumor size was smaller.
2. There was no statistically significant difference comparing the value of PET/CT and CT in diagnosing the spread of tumor to node stations ($p>0.05$).
3. No statistically significant difference was found in the value of diagnosing disntant metastasis ($p>0.05$).
4. PET/CT test altered the stage of NSCLC for more than half of patients.

FIRST CLINICAL EXPERIENCE IN SALVAGE PROSTATE CRYOTHERAPY – PRESENTATION OF 5 CASES

Albertas Ulys, Alvydas Vezelis, Zygimantas Kardelis, Ruta Grigiene

National Cancer Institute, Vilnius, Lithuania

Introduction. Prostate cancer is the most common malignant neoplasia among men in Lithuania, though it presents low mortality rate. Cryotherapy can be a viable alternative for patients with disease progression after radiotherapy, androgen with-drawal, chemotherapy and radical prostatectomy.

Background. Cryotherapy is a method of tissue ablation through local induction of extremely cold temperatures. The procedure is performed with real-time transrectal ultrasound guidance that allows monitoring the insertion of probes and freezing. Freezing and thawing cycles are performed with argon and helium gases respectively.

Case presentation. 5 cases presented. All presented patients received 2-cycle cryotherapy with real-time ultrasound guidance and temperature change tracking. CT, MRT, ultrasound scanning, bone scintigraphy was performed for patients before treatment. No pathological bone changes were detected.

Results. The described treatment scheme for these patients enables to deliver two freezing-thawing cycles with 10 probes and urethra-warming catheter. Urinal obstruction was observed after 1 week for 1 of 5 patients. He had to stay with epicystostomy and overwent prostate transurethral resection. One patient had biochemical progression due to metastasis in lymph nodes, and he got external beam therapy to lymph-node projection.

Conclusion. Our initial experience shows that cryotherapy is effective alternative minimaly invasive option for the treatment of localized prostate cancer or cancer recurrence cases, even for patients previously treated with radiotherapy. Short term data seems to be promising but longer term follow-up is necessary to verify oncological and functional results.

EVALUATION OF THE USE AND EFFECTIVENESS OF ADJUVANT CHEMOTHERAPY IN PATIENTS WITH STAGE II COLON CANCER: DATA FROM THE HOSPITAL OF LITHUANIAN UNIVERSITY OF HEALTH SCIENCES

Domas Vaitiekus[1], Lina Simaskaite[3], Sigita Liutkauskiene[1], Dainius Janciauskas[2], Elona Juozaityte[1], Rasa Jančiauskiene[1]

1 Lithuanian University of Health Sciences, Dept. of Oncology and Hematology
2 Dept. of Pathology, Lithuanian University of Health Sciences3, Kaunas, Lithuania

Background. The use of adjuvant chemotherapy in stage II colon cancer is still controversial. Benefit from this treatment modality is not well established yet. In this study we have analyzed the prevalence and effectiveness of adjuvant chemotherapy in retrospective cohort of stage II colon cancer patients.

Methods. Retrospective data of the patients who underwent surgical treatment at 2004 -2009 due to stage II colon were collected from hospital data base. We have identified 205 patients. Patients were divided in two groups: group 1 – patients who underwent surgical treatment and observation, group 2 - patients who underwent surgery and received adjuvant chemotherapy with fluorouracil based regiment. Survival was evaluated using Kaplan Maier curves. Difference was considered statistically significant when p value was <0.05.

Results. We found 176 patients (86, 3%) in group 1 and 28 patients (13, 7%) in group 2. Average number of adjuvant treatment cycles was 4.9 (ranges between 3-6). Group 1 and 2 were homogeneous regarding the sex, number of dissected lymph nodes, histology type (adenocarcinoma or mucinous carcinoma), and differentiation grade. Statistically significant difference was found regarding the median age (median age in groups – 72 vs 63 years) – patients in group 2 were younger. Also there was a statistically significant difference in tumor size T4 in a group 1 was 14.2% vs 32.1% in group 2 (p 0,018). Overall 5 year survival (OS) of all stage II patients was 80.7%. Cancer specific 5 year survival was 82.1%. Number of dissected lymph nodes was independent factor for better survival when more than 12 lymph nodes were dissected (p<0.05). 5 year OS survival of patients in a group 1 was 80.6% comparing with 81.0% in a group 2 (p=0.208). Adjuvant treatment did not help to improve survival of patients with a different tumor grade (G1 vs G2 vs G3), lymph/blood vessel invasion, and age. We have found strong tendency for the better survival for patients with greater T who received adjuvant treatment (p=0.055). Cox regression analysis did not reveal adjuvant chemotherapy as independent factor for overall survival.

Conclusion. Only 13, 7% of stage II colon cancer patients diagnosed at the period 2004-2009 were treated with adjuvant chemotherapy. Young age and tumor size were the most significant factors for physicians deciding to prescribe adjuvant treatment. We have not found statistically significant difference in survival in adjuvant chemotherapy group comparing with surgery alone, but strong tendencies were seen for chemotherapy benefit in greater (T4) tumors. In multivariate analysis the only one independent factor for better survival was higher number of removed lymph nodes.

HIGH-DOSE-RATE BRACHYTHERAPY AS MONOTHERAPY FOR CLINICALLY LOCALIZED PROSTATE CANCER

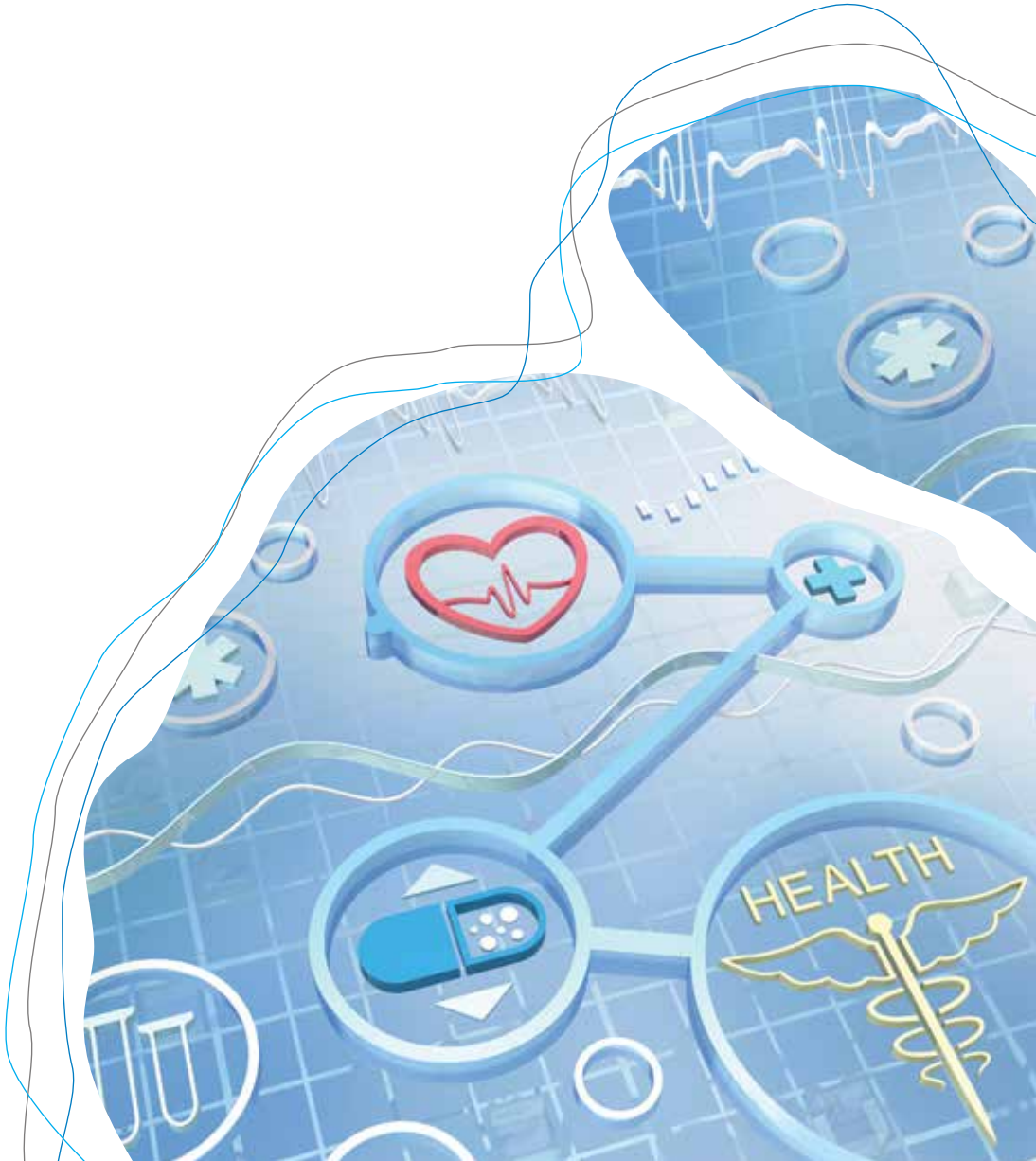
Karolis Ulinskas[1,2], Arvydas Burneckis[2], Andrius Ivanauskas[2], Alvydas Vezelis[2]

1 Faculty of Medicine, Vilnius University, Vilnius Lithuania
2 National Cancer Institute, Vilnius, Lithuania

High-dose-rate brachytherapy (HDR-BT) as monotherapy is a quite new brachytherapy technique for prostate cancer treatment. Since many publications about the radiobiology of prostate cancer converge to a low alpha-beta ratio, indicating high sensitivity to large fractions, results due to the high 'bio- logically effective dose (BED)' of >200 Gy, the interested is growing and number of institutions which apply this method is increasing. Only several institutions worldwide use HDR as a monotherapy for prostate cancer treatment. Under the search of literature we were able to find a total of 12 medical institutions that use this method, and overall 18 papers were published. Overlooking the last publicized papers, 1 to 9-fraction regimens with different number of implantation (from 1 to 3) have been applied recently. Total dose varies from 19Gy to 49Gy and the biologically equivalent dose in 2-Gy fractions (EQD2Gy) usually ranges from 89 to 128Gy. Median follow-up varied from 17 to 5.4 years, most of reported 5-year actuarial PSA biochemical control rates were higher than 90% and ranged from 85 to 97%. Mostly Grade 1 toxicity was observed and no greater than Grade 3 late or acute toxicity was established.

HDR-BT alone would be the most efficient method of achieving a high degree of conformity and dose escalation for low to low-intermediate cancer patients. Due to optimization by altering both the source dwell times and positions to provide an acceptable dose distribution. The sharp dose fall-off allows better sparing of adjacent critical organs that leads to acceptable toxicity levels with better preservation of erectile function compared with other treatment methods. HDR enables to avoid unacceptable dose changes caused by post-implantation sources fall or migration, tissue volume changes and deformation due to swelling and trauma which can occur in LDR-BT. Economically it's more attractive approach than expensive I-125 LDR-BT method and the shorter treatment time is decreasing the costs of care but in other hand anesthesia is required. The method induces fewer radioprotection issues as the radioactive source does not remain in the patient and the medical staff is free from radiation exposure.

Since the methodology of prostate HDR-BT is well mastered and is often used in our institution, it would a perfect treatment option to launch for patients with clinically localized prostate cancer.



POSTER SESSION



	TITLES OF POSTERS	AUTHORS	AFFILIATIONS
1	**First clinical experience in salvage prostate cryotherapy – presentation of 5 cases**	Albertas Ulys, Alvydas Vezelis, Zygimantas Kardelis, Ruta Grigienė	*National Cancer Institute, Vilnius, Lithuania*
2	**First clinical experience in transperineal biopsy of prostate**	Albertas Ulys, Alvydas Vezelis, Zygimantas Kardelis, Arunas Kulboka	*National Cancer Institute, Vilnius, Lithuania*
3	**Functional lung perfusion SPECT imaging for lung-conserving radiotherapy**	Marius Stalnionis, RitaSteponaviciene, Romualdas Griskevicius, Jonas Venius	*National Cancer Institute, Vilnius, Lithuania*
4	**Incorporation of bone SPECT into radiotherapy for precise targeting of bone metastases**	Marius Stalnionis, RitaSteponaviciene, Romualdas Griskevicius, Jonas Venius	*National Cancer Institute, Vilnius, Lithuania*
5	**Stemness and genetic stability of human mesenchymal stem cells isolated from ultralow bone marrow volume**	Gabrielis Kundrotas[1,2] Zivile Gudleviciene[2] Evelina Gasperskaja[1] Grazina Slapsyte[1]	*1 Department of Botany and Genetics, Faculty of Natural Sciences, Vilnius University, Vilnius, Lithuania* *2 Biobank, National Cancer Institute, Vilnius, Lithuania*
6	**Colon cancer cell lines of different aggressiveness vary in their cancer stem cell properties**	Agata Mlynska[1,2] Karolina Zilionyte[1,3] Vita Pašukoniene[1]	*1 National Cancer Institute, Vilnius, Lithuania* *2 Department of Biochemistry and Molecular Biology, Vilnius University, Vilnius, Lithuania* *3 Department of Microbiology and Biotechnology, Vilnius University, Vilnius, Lithuania*
7	**Gene methylation profile in gastric cancerous tissue according to stomach tumor site**	Rita Kupcinskaite-Noreikiene[1] Rita Ambraziene Rasa Ugenskiene[1] Elona Juozaityte[1]	*Lithuanian University of Health Sciences, Oncology Institute, Kaunas, Lithuania*
8	**Medullary thyroid cancer – CASE REPORT**	Rita Ambraziene, Rita Kupcinskaite-Noreikiene	*Hospital of Lithuanian University of Health Sciences, Kaunas, Lithuania*
9	**Isolated limb infusion for in-transit metastatic melanoma. First experience in Estonia**	Jüri Teras, Marina Teras	*North Estonian Medical Centre Foundation, Tallinn University of Technology, Estonia*
10	**Unusual cases of long untreated skin and soft tissue cancers: Buschke-Lowenstein tumor**	Jüri Teras, Marina Teras	*North Estonian Medical Centre Foundation, Tallinn University of Technology, Estonia*
11	**The impact of 18FDG PET/CT for assessing the spread of non-small- cell lung cancer**	Paulius Jarusevicius	*Lithuanian University of Health Sciences, Kaunas, Lithuania*

	TITLES OF POSTERS	AUTHORS	AFFILIATIONS
12	**Comparison between regular helical tomotherapy and dynamic jaw/dynamic couch helical tomotherapy treatment delivery**	Karolis Ulinskas[1] Arvydas Burneckis[1] Mark De Ridder[2] Thierry Gavaert[2]	*1 National Cancer Institute, Vilnius, Lithuania* *2 UZ Brussels, Belgium*
13	**Interaction of HPV and genes polymorphisms in breast and lung cancerogenesis**	Stumbryte Ausra[1,2] Gudleviciene Zivile[1,3] Jankauskaite Elona Airolita[1,2] Mazul Justyna[2]	*1 National Cancer Institute, Vilnius, Lithuania* *2 Vilnius University, Faculty of Natural Sciences, Lithuania* *3 Vilnius University, Faculty of Medicine, Lithuania*
14	**Influence of surgical treatment on TNF-α and TGF-β levels in patients with breast cancer**	Birute Kazbariene, Regina Liudkeviciene, Renatas Tikuisis, Aurelija Krikstaponiene, Valerijus Ostapenko	*National Cancer Institute, Vilnius, Lithuania*
15	**The rare surgical procedure: bilateral laparoscopic extraperitoneal ureterocutaneostomy**	D. Sukys, A. Kulboka, Z. Kardelis, A. Ulys	*National Cancer Institute, Vilnius, Lithuania*
16	**Evaluation of the use and effectiveness of adjuvant chemotherapy in patients with stage II colon cancer: data from the Hospital of Lithuanian University of Health Sciences**	Domas Vaitiekus[1] Lina Simaskaite[3] Sigita Liutkauskiene[1] Dainius Jančiauskas[2] Elona Juozaityte[1] Rasa Janciauskiene[1]	*1 Lithuanian University of Health Sciences, Dept. of Oncology and Hematology* *2 Dept. of Pathology* *3 Lithuanian University of Health Sciences, Kaunas, Lithuania*
17	**Non-invasive methods (HistoScanning and multiparametric MRI) for diagnosis of prostate cancer**	Ieva Naruseviciute, Albertas Ulys, Ruta Briedienė, Alvydas Vezelis, Ruta Grigiene, Mantas Trakymas	*National Cancer Institute, Vilnius, Lithuania*
18	**Gliosarcoma: a case report**	Aista Plieskiene[1], Alvydas Cesas[1], Tomas Dauksas[2]	*1 Klaipeda University Hospital* *2 Vilnius University, Lithuania*
19	**High-Dose-Rate brachytherapy as monotherapy for clinically localized prostate cancer**	Karolis Ulinskas[1,2] Arvydas Burneckis[2] Andrius Ivanauskas[2] Alvydas Vezelis[2]	*1 Faculty of Medicine, Vilnius University, Lithuania* *2 National Cancer Institute, Vilnius, Lithuania*
20	**Cancer patients' distress research**	Ula Luneviciute Egidija Masteikiene	*National Cancer Institute, Vilnius, Lithuania*
21	**Evaluation of DNA mismatch repair system protein expresion in endometrial carcinomas**	Daiva Kanopiene[1], Aida Laurinaviciene[2], Raimundas Meskauskas[2], Saule Uleckiene[1], Konstantinas Povilas Valuckas[1]	*1 National Cancer Institute* *2 National Centre of Pathology, Affiliate of Vilnius University Hospital Santariškių Clinics, Lithuania*

	AUTHORS	AFFILIATIONS	
22	**Influence of postimplant dosimetry time to evaluation of Iodine-125 implantation results**	Laimonas Jarusevicius, Arturas Inciura, Elona Juozaityte	*Oncology institute of Lithuanian University of Health Sciences, Kaunas, Lithuania*
23	**ERCC1 polymorphism in blood of NSCLC patients**	Julija Fadejeva, Diana Schveigert, Nora Krivoscenkaite, Saulius Cicenas	*National Cancer Institute, Vilnius, Lithuania*
24	**Practical implementation of algorithms of patient safe lifting standard**	Loreta Gudelienė-Gudeleviciene	*Center of Professional Training and Specialization of Nurses, Vilnius, Lithuania*
25	**Male breast carcinoma: the results of treatment**	Algimantas Mudenas[1], Algirdas Jackevicius[1], Leonarda Sarakauskiene[2], Saulius Bruzas[1], Virginija Jovaisiene[1], Valerijus Ostapenko[1], Audrone Luksyte[1]	*1 National Cancer Institute, Vilnius, Lithuania* *2 Oncology Institute of Hospital of Lithuanian University of Health Sciences Kaunas Clinics, Lithuania*
26	**Radiosensitivity of chondrosarcomas: a case of spinal chondrosarcoma**	Aista Plieskiene[1], Tomas Dauksas[2]	*1 Klaipeda University Hospital* *2 Vilnius University, Lithuania*
27	**Comparison of Icru and D2cc doses of bladder and rectum in High-Dose-Rate brachytherapy of cervical carcinoma**	Rasa Kavolelyte, Arturas Inciura	*Lithuanian university of Health sciences, Kaunas, Lithuania*
28	**Importance of patient nutritional status evaluation before radiation treatment**	Genovaite Lusyte, Natalija Kuzmina, Mariana Baranovska	*National Cancer Institute, Vilnius, Lithuania*
29	**The effect of signal –inducing proliferation- associated gene polymorphisms on breast cancer outcomes**	Erika Korobeinikova[1], Dana Myrzaliyeva[2], Rasa Ugenskiene[1], Danguole Raulinaityte[1], Jurgita Gedminaite[1], Elona Juozaityte[1]	*1 Lithuanian University of Health Sciences, Oncology Institute, Kaunas, Lithuania* *2 Republican Scientific Center for Emergency Care, Astana, Kazakhstan*
30	**The impact of antioxidative status for cervical cancer carcinogenesis and its predictive significance during neoadjuvant chemotherapy and chemoradiotherapy of locally advanced cervical cancer**	Lina Daukantiene, Konstantinas Povilas Valuckas, Birute Kazbariene, Aurelija Krikstaponiene, Janina Didziapetriene	National Cancer Institute, Vilnius, Lithuania
31	**Differences of reduced glutathione and glutathione S-transferase levels in patients with liver metastases of colorectal cancer and other hepatic disorders**	Edita Baltruškeviciene[1], Birute Kazbariene[1], Aurelija Krikstaponiene[1], Robertas Badaras[2], Linas Zdanavičius[2], Loreta Bagdonaite[2]	*1 National Cancer Institute, Vilnius, Lithuania* *2 Faculty of Medicine of Vilnius University, Lithuania*

	TITLES OF POSTERS	AUTHORS	AFFILIATIONS
32	**Methylene blue *ex vivo* staining of resected colorectal cancer specimens to enhance lymph node retrieval – randomized controlled trial**	Heigo Reima[1] Helgi Saar[2] Jaan Soplepmann[1]	*1 Tartu University Hospital Haematology and Oncology Clinic* *2 Tartu University Hospital Department of Pathology, Estonia*
33	**The impact of single nucleotide polymorphisms of interleukins on pain relief in the radiotherapy treatment of painful bone destructions due to multiple myeloma**	Milda Rudzianskiene, Arturas Inciura, Elona Juozaityte, Rasa Ugenskiene, Dauguole Raulinaityte, Viktoras Rudzianskas	*Oncology Institute of Lithuanian Health Sciences, Kaunas, Lithuania*
34	**Adaptive prostate brachytherapy with I-125 implants: results on early and late toxicity**	Andrius Ivanauskas, Eduardas Aleknavicius, Arvydas Burneckis, Ernestas Janulionis	*National Cancer Institute, Vilnius, Lithuania*
35	**Comparison of effectiveness of Nd:YAG and diode FOX lasers in skin, mucous and soft tissue surgery**	Aleksandras Mordas	*National Cancer Institute, Vilnius, Lithuania*
36	**Distribution and clinicopathological features of breast cancer histological subtypes in Latvia**	Andrejs Srebnijs[1,3] Sergejs Isajevs[2,3] Mihails Timofejevs[1] Viesturs Krumins[1] Janis Eglitis[1,3] Juris Berzins[3] Uldis Vikmanis[3]	*1 Riga East University Hospital, Latvian Oncology Centre, Riga, Latvia* *2 Riga East University Hospital, Centre of Pathology, Riga, Latvia* *3 Faculty of Medicine, University of Latvia, Riga, Latvia*
37	**Prognostic and predictive value of molecular biomarkers: survivin and hypoxia inducible factor 1 alfa in clear cell renal carcinoma**	Evita Gasenko, Alinta Hegmane, Māris Sperga	*Riga East University Hospital, Latvian Oncology Centre, Riga, Latvia*
38	**Clinical factors that may influence outcome for stage II-III resectable rectal cancer patients treated with neoadjuvant chemoradiotherapy or short-term radiotherapy**	Laura Kairevicė[1], Aleksandras Petrauskas[1], Henrikas Pauzas[2], Tadas Latkauskas[2], Algimantas Tamelis[2], Zilvinas Saladzinskas[2], Irina Gineikiene[3], Sigita Liutkauskiene[1], Dainius Pavalkis[2], Laimonas Jarusevicius[1], Rasa Janciauskiene[1]	*1 Lithuanian University of Health Sciences, Department of Oncology and Haematology* *2 Department of Surgery* *3 Department of Radiology, Kaunas, Lithuania*

	TITLES OF POSTERS	AUTHORS	AFFILIATIONS
39	**Does the molecular subtype of tumor affects the type of surgery in breast cancer patients?**	Andrejs Srebnijs[1,2] Sergejs Isajevs[2,3] Mihails Timofejevs[1] Jānis Eglītis[1,2] Viesturs Krūmiņš[1] Juris Bērziņš[2] Uldis Vikmanis[2]	*1 Latvian Oncology Centre of Riga East Clinical University Hospital, Riga, Latvia* *2 Medical Faculty of Latvian University, Riga, Latvia* *3 Patology centre of Riga East Clinical University Hospital, Riga, Latvia*
40	**Results of surgical treatment of colorectal cancer liver metastases in Latvia Oncology Center**	L. Lauka[1] G. Ancans[1,2] S. Gerkis[1] A. Pcolkins[1] V. Krumins[1] I. Nemiro[1,3] A. Strazdina[1] M. Leja[2] A. Sivins[1,2] I. Kreice[1]	*1 Latvia Oncology Center, Riga East Clinical University Hospital, Riga, Latvia* *2 University of Latvia, Riga, Latvia* *3 Riga Stradins University, Riga, Latvia*
41	**Neoadjuvant phytotherapy – prelude to Cryoexcision of clinically atypical nevus**	Juozas Prusinskas Agne Prusinskaite	*"Apgamas", Vilnius, Lithuania*
42	**Relationships between immunosuppression, stemness and drug resistance in ovarian cancer**	Agata Mlynska[1,2] Sima Garberyte[1] Karolina Zilionyte[1,3] Evelina Stankevic[1,2] Vita Pasukoniene[1]	*1 Laboratory of Immunology, National Cancer Institute, Vilnius, Lithuania* *2 Department of Biochemistry and Molecular Biology, Vilnius University, Vilnius, Lithuania* *3 Department of Microbiology and Biotechnology, Vilnius University, Vilnius, Lithuania*
43	**Expression of immunogenic and tolerogenic markers on dendritic cells generated by two different maturation methods**	Neringa Dobrovolskiene, Marius Strioga, Vita Pasukoniene, Zivile Gudleviciene	National Cancer Institute, Vilnius, Lithuania
44	**Novel cytometric drug effluxassessment model for more accurate identyfication of cancer stem cells**	Jan Aleksander Kraśko, Ilona Maksimova, Vita Pasukoniene	National Cancer Institute, Vilnius, Lithuania
45	**Laparoscopic colorectal surgery at the North Estonia Medical Centre: ten years of clinical experience**	Indrek Seire	Surgery Clinic, North Estonia Medical Centre, Tallinn, Estonia

THIS CONGRESS WAS FUNDED BY:

Science · Economy · Cohesion
European Union
Creating the Future of Lithuania

Lietuvos mokslo taryba

GENERAL SPONSORS

Roche
TEVA Oncology
SANOFI

THE MAIN SPONSORS

AstraZeneca
Berlin-Chemie Menarini
gsk
Graina Medical solutions
Lilly
Janssen Pharmaceutical Companies of Johnson & Johnson
Panevėžio keliai
Pfizer
tradintek

SPONSORS

PST
Bayer
cbt
interlux Medicinai, mokslui, gyvenimui
Mölnlycke Health Care
Spektramed
APE
Med Will
Skirgesa
VPC
SOR medica
Morfėjus


20 THE ANNIVERSARY FROM THE FIRST MEETING OF ONCOLOGISTS FROM THE BALTIC COUNTRIES
"THE BETTER UNDERSTANDING OF CANCER HELPS TO OVERCOME IT EASIER"



